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City of Boston
Town of Brookline

Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement, and Historic Preservation Project

Volume 8
Appendix M CAC Public Materials

December 2001

Prepared By: **CDM**

In Association with:

Jason M. Cortell and Associates, Inc.
Pressley Associates, Inc.
Vanasse Hangen Brustlin, Inc.

Appendices

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Appendix M

APPENDIX M

CAC PUBLIC MATERIALS

Appendix M – CAC and General Public Meeting Materials

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Emerald Necklace Citizens Advisory Committee

Please Add to Tab # 6 of the CAC Workbook

Schedule of Meetings

Revised: 6/26/01

No.		Date	Topic(s)	Location
1	Wed.	29-Sep-1999	Introductions; slide presentation of park	96 The Fenway, NU Faculty Lounge
2	Tue.	26-Oct-1999	Dr. Charles Beveridge presentation; Master Plans	96 The Fenway, NU Faculty Lounge
3	Mon.	28-Feb-2000	J. Wickersham (MEPA): "Role of CAC" presentation; Introduce consultants; project overview	96 The Fenway, NU Faculty Lounge
4	Thur.	30-Mar-2000	Project Alternative Identification	Egan Center, NU
5	Tue.	16-May-2000	Best Management Practices	96 The Fenway, NU Faculty Lounge
6	Tue.	13-Jun-2000	Habitat/Rare Species	Egan Center, NU
7	Mon.	17-Jul-2000	Historic Resources	450 Dodge Hall, NU
8	Tue.	22-Aug-2000	Staging Areas; Pedestrian & Traffic Issues	Egan Center, NU
9	Tue.	19-Sep-2000	Culvert/Open Channel Alternatives	450 Dodge Hall, NU
10	Thur.	28-Sep-2000	Sediment Characterizations/Disposal	Egan Center, NU
11	Mon.	23-Oct-2000	Alternatives Evaluation	Egan Center, NU
12	Mon.	30-Oct-2000	Best Management Practices	Egan Center, NU
---	Wed.	08-Nov-2000	PUBLIC INFORMATION MEETING	Egan Center, NU
13	Wed.	15-Nov-2000	Mitigation	96 The Fenway, NU Faculty Lounge
14	Thur.	25-Jan-2001	Overview of Project Elements and Construction Cost Estimate	Egan Center, NU
15	Mon.	26-Feb-2001	Construction Cost Estimate (continuation of discussion) and Overview of Draft Environmental Impact Report outline	Egan Center, NU
16	Wed.	14-Mar-2001	Discussion of How the CAC will Review the Draft EIR	96 The Fenway, NU Faculty Lounge
17	Mon.	23-Apr-2001	CAC Review of DEIR: Topic #1--Vision Statement/Executive Summary	450 Dodge Hall, NU
18	Wed.	02-May-2001	CAC Review of DEIR: Topic #2--Project Alternatives	440 Egan Center, NU
19	Mon.	07-May-2001	CAC Review of DEIR: Topic #3--Project Description/Preferred Alternative	440 Egan Center, NU
20	Wed.	16-May-2001	CAC Review of DEIR: Topic #4--Project Impacts & Mitigation	440 Egan Center, NU
21	Mon.	21-May-2001	CAC Review of DEIR: Topic #5--Best Management Practices (BMPs)	450 Dodge Hall, NU
22	Wed.	30-May-2001	CAC Review of DEIR: BMPs (continuation of discussion)	96 The Fenway, NU Faculty Lounge
23	Mon.	04-Jun-2001	CAC Review of DEIR: Topic #6--Management & Maintenance Plan	450 Dodge Hall, NU
24	Wed.	13-Jun-2001	*CAC Review of DEIR:* *Topic #7--Project Funding*	96 The Fenway, NU Faculty Lounge
25	Wed.	20-Jun-2001	*CAC Review of DEIR: Topic #8--Misc. Topics*	440 Egan Center, NU
26	Mon.	25-Jun-2001	*CAC Review of DEIR: Review of Executive Summary & Wrap-up*	450 Dodge Hall, NU
27	**Tue.**	**10-Jul-2001**	***CAC Review of DEIR: Additional Meeting time***	***to be determined***
28	**Wed.**	**18-Jul-2001**	***CAC Review of DEIR: Additional Meeting time (if needed)***	**440 Egan Center, NU**

The MA Executive Office of Environmental Affairs,
the City of Boston and the Town of Brookline

invite you to the attend the first meeting of the

Citizens Advisory Committee
for the

Muddy River Restoration Project

to be held
Wednesday, September 29, 1999
6:00 P.M.
Northeastern University Faculty Club
96 The Fenway, Kerr Hall (Second Floor), Boston

In 1996 and 1998, flooding of the Muddy River caused nearly $100 million in property damage to residences, businesses, institutions and the transportation system in proximity to it. The Muddy River Restoration Project will implement a flood mitigation and bank-to-bank restoration program for this Emerald Necklace waterway and its waterparks. Under MEPA regulations, the CAC serves as an advisory body to the Secretary of Environmental Affairs, Commonwealth of Massachusetts and the project's proponents.

Please feel free to share this invitation with colleagues and your organization's membership.

For further questions on this meeting, call Ms. Laura Rome, MEPA Office at 617-626-1030.

Parking is available at the Forsyth Dental School lot on Hemenway Street.
The Northeastern University and Fenway Park subway stops are closest to 96 The Fenway.
The facility is handicapped accessible.

CAC September 29, 1999

Meeting Agenda

----to be attached at a later date----

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE
MEETING SUMMARY
29 SEPTEMBER 1999

Meeting moderated by Jane Wells,
Deputy Director, Massachusetts Office of Dispute Resolution.

I. Welcome by Betsy Shure Gross, Executive Office of Environmental Affairs

II. MEPA Procedures presented by Laura Rome
- CAC's job is to make sure that the project avoids environmental impacts, and if there are impacts that they be minimized and mitigated as much as possible.
- The CAC is an advisory review body which will see segments of the work presented a minimum of one month before the official submission to the Secretary of Environmental Affairs.
- Conflict of interest issues are resolved with the fact that the CAC is a review body not an approval body and that full disclosure of all committee members will be requested.
- The Secretary's certificates on the project identifies issues and the CAC as part of the public participation process.

III. Facilitator Introductions by Fredie Kay, Office of Dispute Resolution
- The Massachusetts Office of Dispute Resolution fundamental mission is consensus building and project facilitation.
- The facilitator offers the project a neutral party as "Chair" and moderator.

IV. CAC Procedures by Jane Wells, Office of Dispute Resolution
- The CAC members who are representing groups need to communicate with their respective memberships and bring the various views to the meetings, as well as sharing the discussions with their members.
- The twenty-nine CAC members will be working to achieve consensus on issues which will be offered to the project proponent (The Boston Parks and Recreation Department). No formal votes will be taken.
- Individual divergent views will be handled on a case by case basis.
- Project modifications will be re-reviewed by the CAC.
- Individuals may still communicate with project proponent.
- Statements from the CAC may still happen after the formal submission.
- Meetings will be held from 6-8 p.m.

- Discussion progression will begin with the CAC members exploring an issue, after which the chair will recognize other attending individuals for their comments.
- Non-CAC members should work with or through the committee members.
- CAC procedures may be modified as operational issues come up.

V. Member Introductions

Jane Wells requested each CAC member to state their expectations for this project.

Christine Cooper: When does the shovel go into the ground?
June Hatfield: To return tranquility and wildlife back to Olmsted, but for modern times.
Suzanne Comtois: Water quality needs to be resolved and the neighborhood connection.
Ed Cutler: Restored aquatic habitat, no more basement flooding, balanced ecosystem.
George Karakis: Improve Fens and Muddy River, so it looks and works better.
Gary Hilderbrand: Responsible and realistic solutions to historic landscape preservation.
Hugh Mattison: How do we maintain it?
Paul Mentag: Common vision making and a restored natural landscape.
Fran Gershwin: Speed up restoration, insure no more flooding, facilitate process.
Jane Pfister: Landscape integrity, BMP's, long-term maintenance.
Frances Kemp: Find permanent solutions to siltation problems.
Alan Goodman: Address quality-of-life issues of EN, no more flooding.
Eileen Woodford: Preservation of EN in a modern age.
Margaret Dyson: Successful balance between historic preservation and wetlands.
Fredericka Veikley: Find a way to make the water work.
Pam DiBona: Concern about healthy water, beauty, habitat, flooding, and public access.
Kate Bowditch: Thorough process, and does best for water quality, flooding, and habitat.
Richard Heath: Restore the brilliant original design.
George Haggerty: Fix the functions—as a park, flooding, water quality.
Lauren Meier: Achieve balance between historic preservation and environmental values.
Irene Gillis: Priority 1 flooding; 2 water quality; wants technical experts to review work.

VI. Staff Introductions by Commissioners Justine Liff and Tom DeMaio

Each commissioner stated their support and enthusiasm for the project and thanked the CAC members for volunteering their time.

VII. Emerald Necklace History by Fran Beatty

A pictorial history of the original design and its modern evolution was presented for orientation.

VIII. Questions & Answers/Materials Review

CAC members were given a briefing package including an Emerald Necklace Brochure, Emerald Necklace Master Plan Preliminary Galley with maps, the project ENF, and a CAC member list.

- Audience member stated that law enforcement representation should be on the CAC.
- Public safety issues should be forwarded to the appropriate municipality. The ENCAC charge is to review the various projects within the Emerald Necklace which may be presented overtime.
- One request was to improve the water quality and get the Muddy River back to a Class A water designation.
- Another comment was that dredging should be minimized.
- A request was made to daylight the parcel in front of Landmark Center.
- Another request was made to connect the Necklace to the Esplanade.

IX. Meetings Schedule

The next meeting was scheduled for 26 October at 6:00 p.m. [notice previously sent]. A meeting schedule was distributed [which is now under review and verification].

BOSTON
Thomas M. Menino, Mayor

MEMORANDUM

DATE: 15 October 1999

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Meeting Notice and Agenda

The next CAC meeting is confirmed for:

Tuesday, October 26
6:00 p.m. - 8:30 p.m.
Kerr Hall, 96 The Fenway
Northeastern University Faculty Center

The Agenda is as follows:

A. Welcome — Fredie Kay, Ex. Director
Massachusetts Office of Dispute Resolution

B. Administration Issues

C. "The Role of Water in Frederick Law Olmsted's Park Design"
Dr. Charles E. Beveridge, Historian

D. Emerald Necklace and Franklin Park Master Plans:
Methodology and Recommendations

E. Adjourn

Administrative Notes: 1) The September 29th meeting summary will be distributed at the next CAC meeting. Future summaries will be mailed (or emailed) to CAC members prior to the subsequent meeting. Corrections or brief additions need to be sent in writing to Fran Beatty at the Boston Parks Department's address or email to beatty@ci.boston.ma.us. These changes will be attached to the next set of meeting summaries. 2) We are still working on the six month meeting schedule. The schedule will rotate the meetings throughout the days of the week with the hope to minimize the number of meetings that any one member must miss.

We look forward to seeing you on the 26th.

Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

EMERALD NECKLACE
CITIZENS ADVISORY COMMITTEE

AGENDA
26 October 1999

A. Welcome	Fredie Kay, Executive Director Massachusetts Office of Dispute Resolution
B. Administration Issues	Fredie Kay
C. "The Role of Water in Frederick Law Olmsted's Park Design"	Dr. Charles E. Beveridge, Historian
D. Emerald Necklace and Franklin Park Master Plans: Methodology and Recommendations	Marion Pressley, Pressley Associates, Inc. Fran Beatty, Boston Parks Department
E. Adjourn	

Administrative Notes:

1) The September 29th meeting summary will be distributed at the next CAC meeting. Future summaries will be mailed (or emailed) to CAC members prior to the subsequent meeting. Corrections or brief additions need to be sent in writing to Fran Beatty at the Boston Parks Department's address or email to beatty@ci.boston.ma.us. These changes will be attached to the next set of meeting summaries.
2) We are still working on the six month meeting schedule. The schedule will rotate the meetings throughout the days of the week with the hope to minimize the number of meetings that any one member must miss.

MEMORANDUM

DATE: February 7, 1999

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Meeting Notice and Agenda

The next CAC meeting is confirmed for:

Monday, February 28, 2000
6:00 p.m. – 8:00 p.m.
Kerr Hall, 96 The Fenway
Northeastern University Faculty Center

The Agenda is as follows:

I. Welcome	Fredie KayMA, CAC Facilitator MA Office of Dispute Resolution
II. MEPA Presentation	Jay Wickersham, Director, MEPA Scope and Role of the CAC

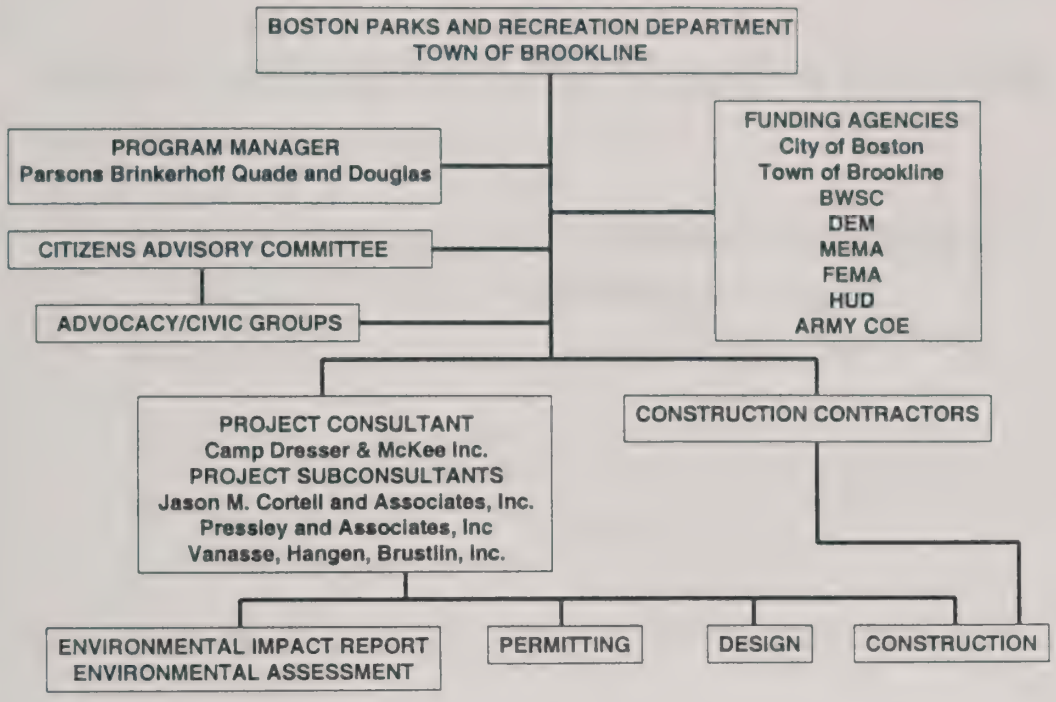
III. Introduction of Consultants

IV. Consultant Presentation
- Project Overview
- CAC Topics and Schedule

V. Discussion of:
- Overview
- Topics

VI. Schedule Of Topics & Wrap Up

We look forward to seeing you on the 28th. Please note that no meeting summaries are being offered, since the presentation was a briefing of the Emerald Necklace and Franklin Park Master Plans. The plans themselves offer the best reference.



BOSTON PARKS AND RECREATION DEPARTMENT
TOWN OF BROOKLINE

PROGRAM MANAGER
Parsons Brinkerhoff Quade and Douglas

CITIZENS ADVISORY COMMITTEE

ADVOCACY/CIVIC GROUPS

FUNDING AGENCIES
City of Boston
Town of Brookline
BWSC
DEM
MEMA
FEMA
HUD
ARMY COE

PROJECT CONSULTANT
Camp Dresser & McKee Inc.
PROJECT SUBCONSULTANTS
Jason M. Cortell and Associates, Inc.
Pressley and Associates, Inc
Vanasse, Hangen, Brustlin, Inc.

CONSTRUCTION CONTRACTORS

ENVIRONMENTAL IMPACT REPORT
ENVIRONMENTAL ASSESSMENT

PERMITTING

DESIGN

CONSTRUCTION

Camp Dresser & McKee Inc.

Muddy River Restoration Project

Overview and CAC Topics

February 28, 2000

David Noonan PE,
Bruce Conklin PE,
Carlton Noyes

Staff and Roles

- Camp Dresser & McKee Inc.
  - David Noonan, P.E.
  - Bruce Conklin, P.E.
  - Paul Demit
- Jason M. Cortell and Associates, Inc.
  - Jason M. Cortell
  - Carlton Noyes

Staff and Roles

- Pressley and Associates, Inc.
  - Marion Pressley, FASLA
  - Gary Claiborne
- Vanasse, Hangen, Brustlin, Inc.
  - Joseph Magni

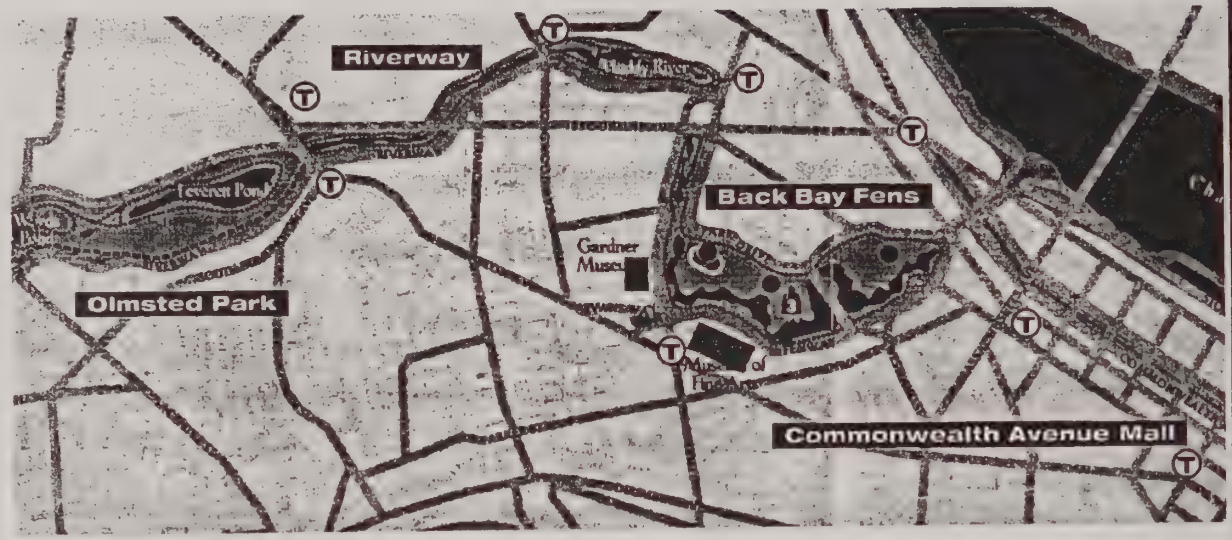
Additional Subconsultants (1 of 2)

- Green International Affiliates, Inc. - Topographic Survey, Wetland Flag Survey
- LEC Environmental - Habitat Studies
- GConn - Construction Consulting
- GeoTek Engineering - Geotechnical borings, Sediment Sampling
- CDM Jessberger - Geotechnical Engineering

Additional Subconsultants (2 of 2)

- Dr. Charles Beveridge - Historian
- AMRO - Laboratory Analytical Testing
- Toxikon - Laboratory Analytical Testing

Phase 1 Project Area



Project Objectives

- Provide flood control
- Improve water quality
- Enhance aquatic / riparian habitat
- Restore landscape and historic resources
- Institute Best Management Practices (BMP) in Muddy River system

Project Elements

- Environmental Impact Report / Environmental Assessment (EIR/EA)
- Preliminary Design
- Permitting
- Final Design
- Construction Services

Phase 1 Project (1 of 3)

- Phase 1 is first part of multiphase project
- MEPA Certificate identifies Phase 1 scope and Annual Updates
- Phase 1 area includes:
  - Charlesgate, Back Bay Fens, Riverway
  - Leverett Pond, Willow Pond, Ward's Pond

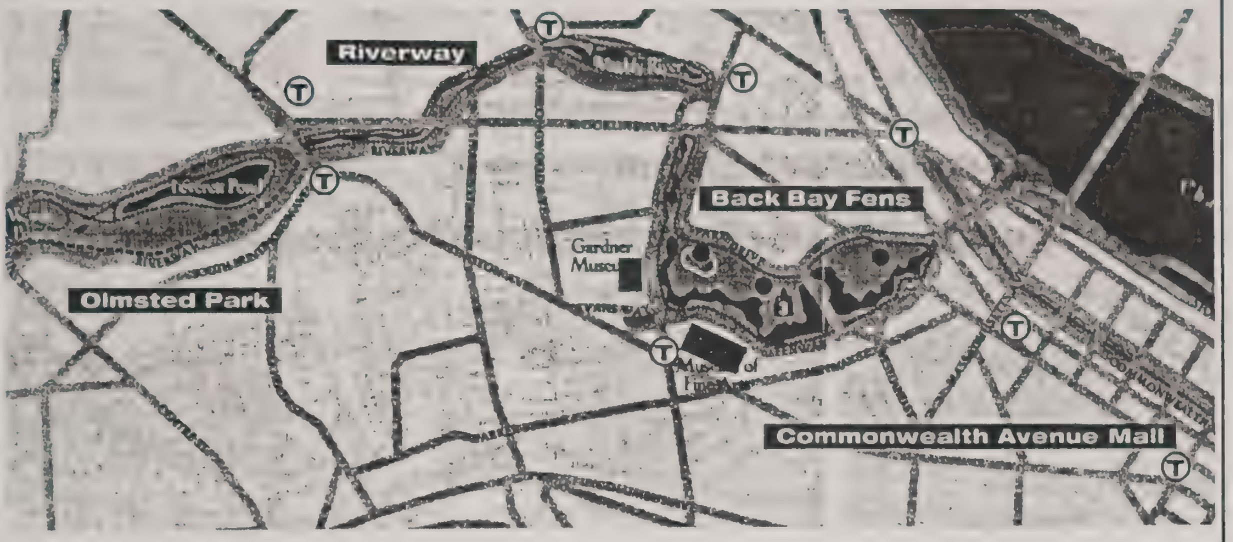
Phase 1 Project (2 of 3)

- Phase 1 Scope includes:
  - Flood control
  - Water quality improvements
  - Habitat enhancement
  - Best Management Practices Plan for watershed
  - Develop historic landscape restoration plan
  - Restoration of disturbed landscape areas

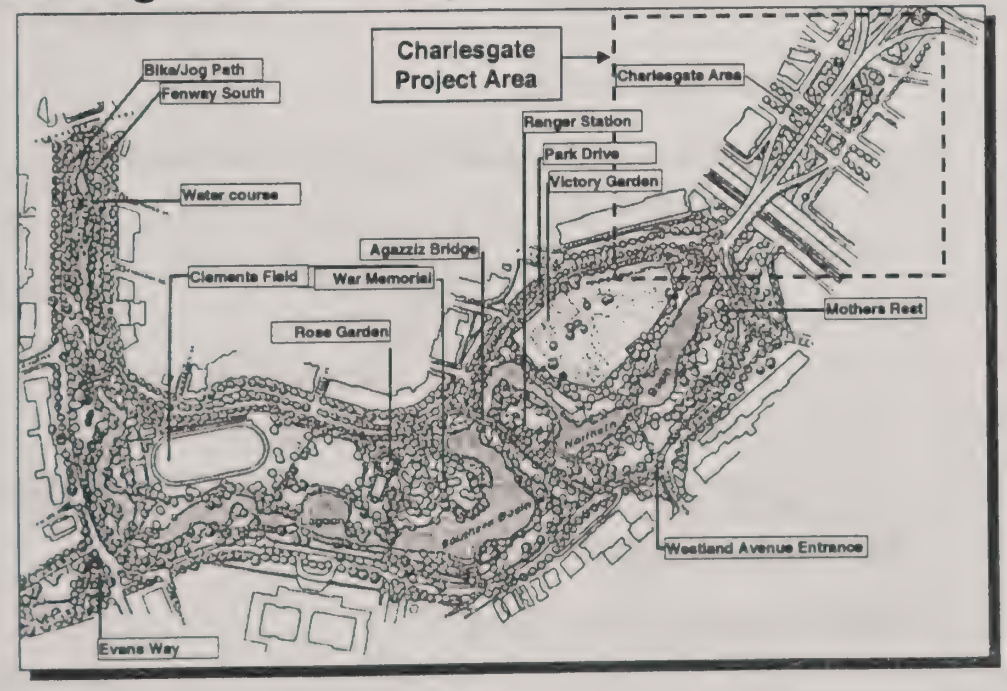
Phase 1 Project (3 of 3)

- Post-Phase 1 Work
  - Continue landscape restoration and improvements
  - Continue historic restoration
  - Traffic improvements
  - Bridge / building restoration

Phase 1 Project Area



Charlesgate Area Project

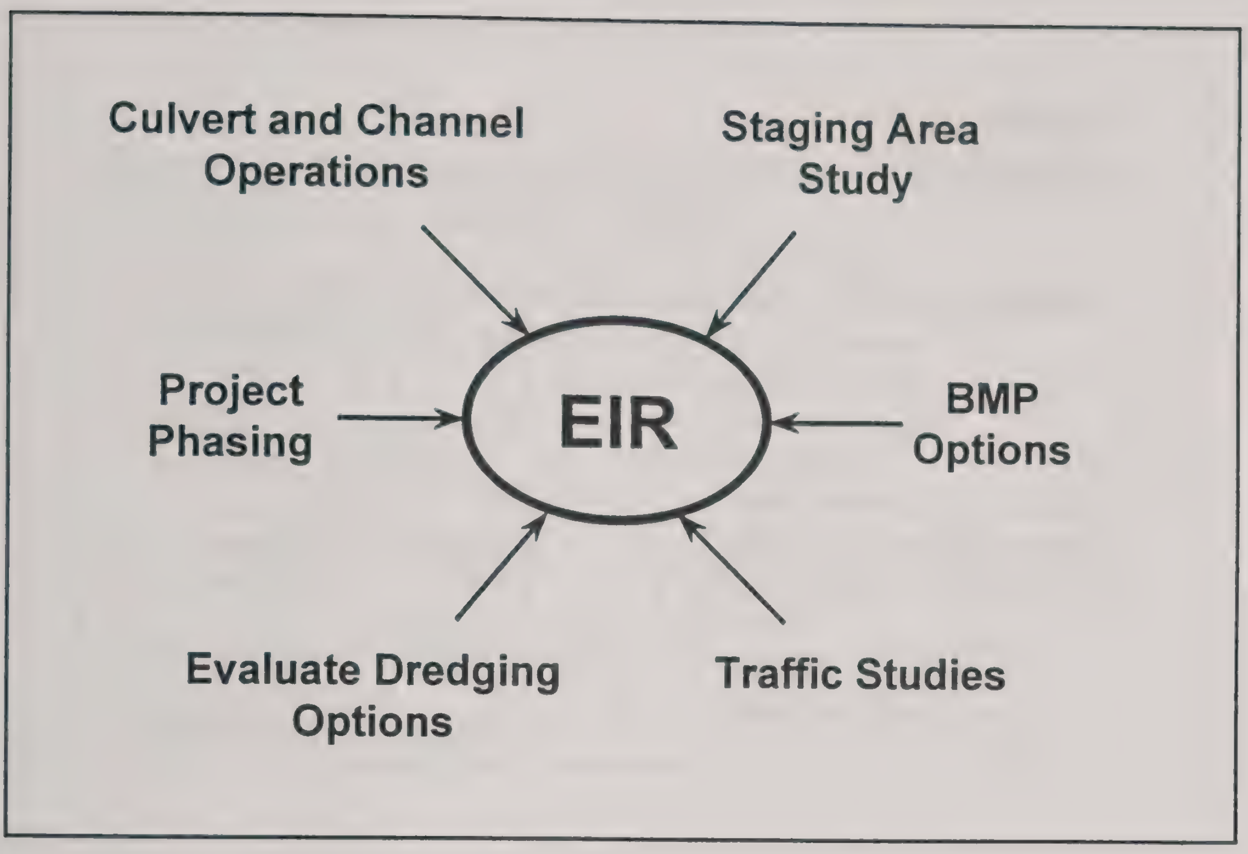


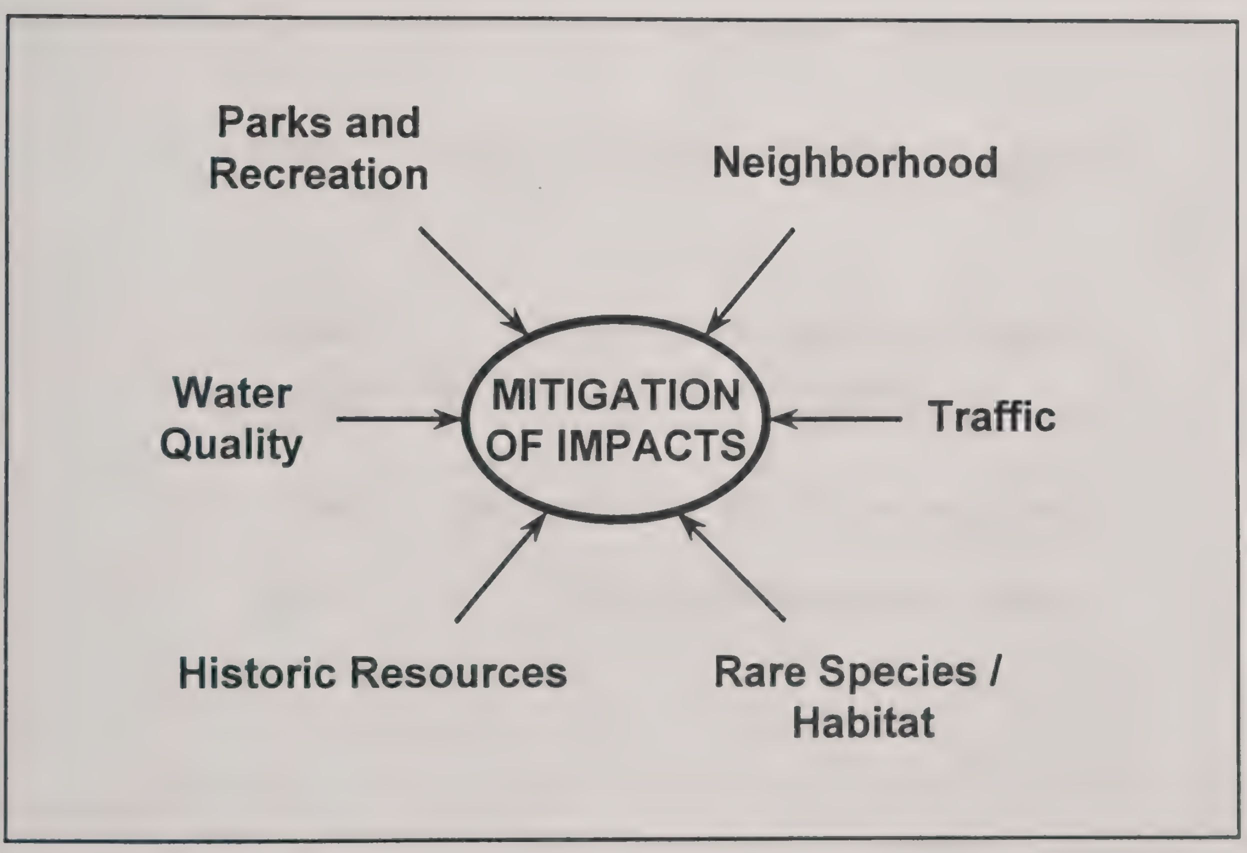
Phase 1 Project(s) after Charlesgate

- Alternative projects identified in Environmental Impact Report / Environmental Assessment
- Construction contract(s) identified and packaged

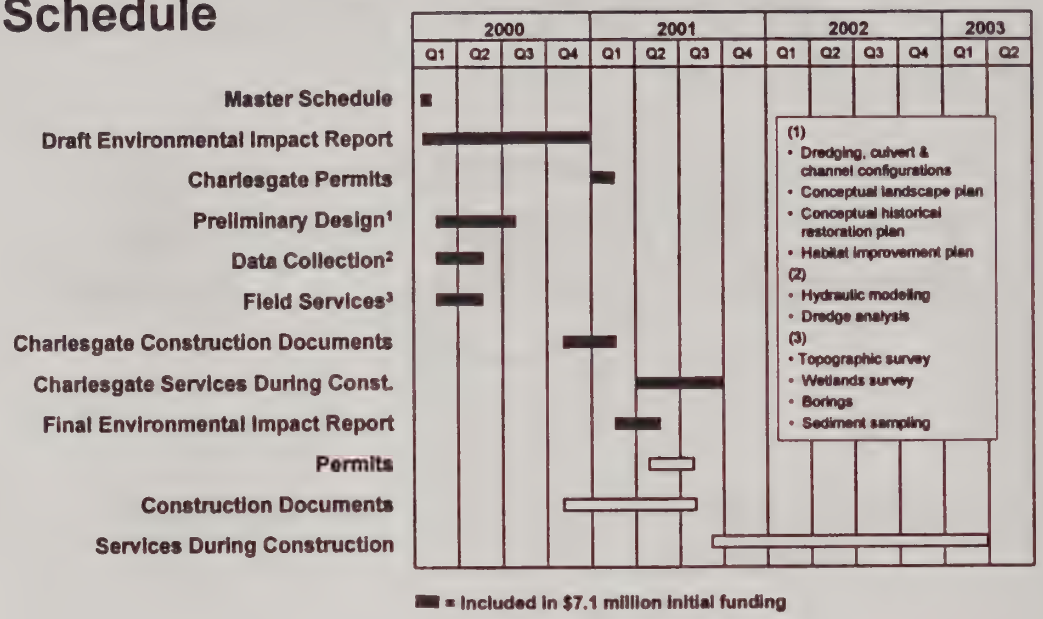
Work Elements

- Master Schedule
- Environmental Impact Report / Environmental Assessment
  - Describe existing conditions
  - Analyze project alternatives
  - Describe impacts of proposed project(s)
  - Mitigation measures for project(s)
  - Monitoring & Maintenance (Post Construction)
- Engineering Elements
- Mitigation of Impacts


Culvert and Channel Operations
Staging Area Study
Project Phasing
EIR
BMP Options
Evaluate Dredging Options
Traffic Studies


Parks and Recreation
Neighborhood
Water Quality
MITIGATION OF IMPACTS
Traffic
Historic Resources
Rare Species / Habitat

Preliminary Schedule



(1)
- Dredging, culvert & channel configurations
- Conceptual landscape plan
- Conceptual historical restoration plan
- Habitat improvement plan

(2)
- Hydraulic modeling
- Dredge analysis

(3)
- Topographic survey
- Wetlands survey
- Borings
- Sediment sampling

Proposed CAC Meeting Topics - 2000 (1 of 2)

Project Alternative Identification	March
BMP Alternatives	April
Rare Species / Habitat Improvements	May
Historic Resources Evaluation	June

Proposed CAC Meeting Topics - 2000 (2 of 2)

Culvert / Open Channel Options / Dredging & Disposal Options	July & August
Staging Areas / Traffic and Pedestrian Issues	Sept
Alternatives Evaluation and Cost	October
Mitigation / Implementation	November
EIR/EA Presentation	December

Questions and Answers

Muddy River Restoration Project

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – February 28, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I **Welcome**

Fredie Kay, MA Office of Dispute Resolution, CAC Facilitator

II **MEPA [Massachusetts Environmental Policy Act] Presentation**

Jay Wickersham, Director, MEPA

III **Introduction of Consultants**

Fran Beatty, Senior Landscape Architect, Boston Parks and Recreation Dept.

IV **Consultant Presentation**

David Noonan, P.E., Vice President, Camp Dresser & McKee
Bruce Conklin, P.E., Vice President, Camp Dresser & McKee
Carlton Noyes, Jason M. Cortell and Associates

V **Discussion of Presentation and CAC Meeting Topics**

VI **Schedule of CAC Meeting Topics**

Summary

II MEPA Presentation

Jay Wickersham provided an overview of the MEPA regulations. Mr. Wickersham emphasized that the key goals of the environmental review process is to insure overall project external coordination and insure that review of projects is done in a very public manner. He then summarized the MEPA process for the Muddy River Restoration Project. Two certificates were issued by the Secretary of Environmental Affairs relating to the ENF. The first certificate outlined the scope of work for the EIR process. The second certificate outlined the process for the Special Review Procedure for the project. Mr. Wickersham stated that the provisions of the Special Review Procedure set up the CAC in order to expand public review and input on the project. The CAC is a diverse group representing many constituencies interested in the Muddy River. The primary responsibilities of the CAC are to:

1. Advise the Secretary of Environmental Affairs

2. Review and comment on the documents prepared as part of the EIR process

Mr. Wickersham also added that all EIR submittals by or on behalf of the Boston Parks and Recreation Department, shall be submitted to the CAC 30 days prior to their distribution to the public.

Questions

What is the significance between the partnering agencies Memorandum of Understanding (MOU) and MEPA?

The MOU is not a jurisdictional issue to the MEPA review process.

Who will prepare the environmental review documents as required by the MEPA process?

The Boston Parks and Recreation Department and its consultants will prepare the environmental review documents. The public will have opportunities to provide input, review and comments on the documents.

A request was made for members of the CAC to publicly disclose their professional affiliations in an effort to identify any potential conflict of interest situations.

Freddie Kay, CAC Facilitator, will take comments from members of the CAC for consideration on this issue.

When will the public receive responses to the comments they submitted on the Environmental Notification Form (ENF) for this project?

Responses to all comments submitted on the ENF will be published in the Draft Environmental Impact Report.

III Introduction of Consultants

Fran Beatty presented a project organization chart, see attached, that illustrates the coordination between the project funding agencies, CAC, program manager, project consultant team, and the Boston Parks and Recreation Department.

Ms. Beatty explained the role of the Program Management consultant, John Burckhardt, Parsons Brinckerhoff (PB), to support and assist the Parks and Recreation Department in the day-to-day management tasks of the Muddy River Restoration Project. *Mr. Burckardt can be reached at the Boston Parks Department at 635-4505 or at jburckardt@ci.boston.ma.us.*

Ms. Beatty then explained the role of the Engineering consultant, Camp Dresser & McKee (CDM) and its subconsultants.

IV Consultant Presentation

A copy of the presentation made by the Camp Dresser & McKee team is included as Attachment 2.

The role of Camp Dresser & McKee and its subconsultants was summarized. The project objectives were reviewed and include:

- Provide flood control
- Improve water quality
- Enhance aquatic/riparian habitat
- Restore landscape and historic resources
- Institute Best Management Practices (BMP) in the Muddy River system

The project elements were also reviewed and include:

- Environmental Impact Report (EIR)
- Preliminary Design
- Permitting
- Final design
- Construction services

The Muddy River Restoration Project is also known as Phase I in the context of a larger multi-phase Emerald Necklace improvement and restoration program as described in the ENF.

The details of each project element of Phase I were presented. In addition, the scope and schedule of the Charlesgate piece of the project was discussed. The Charlesgate piece will move into construction after the Certificate from the Secretary of Environmental Affairs is issued on the Draft EIR.

Bruce Conklin, CDM's Project Manager, emphasized that the EIR process will include an evaluation and assessment of project alternatives, identification of all project impacts and proposed mitigation measures for all potential impacts.

The preliminary project schedule was presented in summary form and includes:

Element	Projected Start	Projected End
EIR	Q1 2000	Q2 2001
Preliminary Design	Q1 2000	Q3 2000
Final Design	Q4 2000	Q3 2001
Construction	Q3 2001	Q1 2003
Charlesgate (construction)	Q2 2001	Q3 2001

V Discussion

Following the presentation by the CDM consultant team the following questions were asked by CAC members and others present.

Why is the Charlesgate piece of the project moving into construction sooner than the remaining parts of the project?

Jay Wickersham responded by stating that the Phase I Waiver that is part of the Secretary's Certificate, describes why the Charlesgate piece is moving ahead. The construction impacts of the Charlesgate work are relatively minimal but the flood control benefits of this project are great.

When will the construction staging areas be identified and impacts evaluated. This issue is of great concern to the Fenway Garden Society?

Construction staging areas will be identified and evaluated during the EIR process and they will be specifically discussed at the proposed September 2000 CAC meeting.

Use of the term "Historic Landscape Restoration Plan" can be confusing and will mean different things to different people depending on their discipline.

Marion Pressley responded for the CDM team and said that "Historic Landscape Restoration Plan" will be changed to "Historic Landscape Treatment Plan" to avoid the potential confusion of what this work will include.

A concern was expressed about the project objective "restore landscape and historic resources" was listed as fourth among the primary project objectives. Further, an evaluation of the arboricultural needs to be done prior to the identification of staging areas.

David Noonan responded for the CDM team and said that all project objectives are integrated and the evaluation of project impacts will be done in a holistic manner. Noonan added that the order of CAC topics is not in order of priority. [illegible]

There appears to be a lot of conflicting values and objectives. Will a functions and values analysis be conducted and how will the consultants work together?

The consultant team acknowledged the competing and conflicting interests and discussed how some resources, i.e. wetlands, are governed by federal and state laws and regulations, and federal the historic landscape treatment requirements.

The Muddy River Restoration Project is a flood control project first and foremost. In addition, the consultant team should remember that the Back Bay Fens of today is different from what Olmsted envisioned. The Muddy River System has to be elastic and the consultant team should be flexible in its approach to the restoration aspects of this project.

The project team acknowledges that they need to take a flexible approach and that the project objectives can be complimentary.

In evaluating potential habitat improvements, concern was expressed about the existing, common and ordinary wildlife, particularly the bird habitat.

The habitat identification and assessment will consider all habitats and include an evaluation on protection and improvement of habitat.

A follow-up request was made to modify the habitat protection objective and refer to it as habitat protection and enhancement.

VI Schedule of CAC Meeting Topics

Bruce Conklin presented the proposed topics and schedule of CAC meetings and the rationale for the schedule and topics.

There was general discussion regarding the CAC meeting topics and the sequencing of topics. Bruce Conklin explained that the sequencing of topics is based upon the timing of when each aspect of the project is conducted and may be revised once the master schedule is prepared.

The meeting topics and their sequencing were generally agreed upon by the CAC and all agreed that the schedule is flexible enough to accommodate any unanticipated changes in the project schedule as we proceed.

Follow-Up Actions

1. The CAC requested that a glossary of key project terms be developed and updated regularly. A preliminary glossary will be created for the next CAC meeting.

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for Thursday, March 30, 2000 a 6:00 PM.

The subject of the meeting will be a presentation and review of proposed project alternatives that will be further evaluated through the MEPA environmental review process.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – CDM Consultant Team Presentation

EMERALD NECKLACE
Citizens Advisory Committee
28 February 2000

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Page 1 of 4

EMERALD NECKLACE
Citizens Advisory Committee
28 February 2000

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EMERALD NECKLACE
Citizens Advisory Committee
28 February 2000

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Fredie Kay	MODR	617.727 2224 x 21175	Fredie.Kay@state.ma.us

EMERALD NECKLACE
Citizens Advisory Committee
28 February 2000

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MEMORANDUM

DATE: March 8, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Meeting Notice; Other Information

The next CAC meeting is confirmed for:

Thursday, March 30, 2000
6:00 p.m. – 8:30 p.m.
Kerr Hall, 96 The Fenway
Northeastern University Faculty Center

Agenda Topic: Project Alternative Identification

The objective is to identify specific Project Alternatives that achieve the project goals. These alternatives also include the no-action alternative.

Introduction of Project Management Consultant

The Boston Parks and Recreation Department has retained a Project Management consultant, Parsons Brinckerhoff (PB), to assist in the day-to-day management tasks of the Muddy River Restoration Project. John F. Burckardt, P. E., of PB will be working in the Boston Parks Department offices assisting Fran Beatty. John is a civil engineer with both a B. S. and M. S. from Northeastern University and over 20 years experience with transportation and major urban drainage projects.

John will be responsible for such tasks as managing the design consultant team, overseeing the project budget, and being the liaison with the CAC and the various agencies involved.

If you have any questions, such as meeting dates and times, or would like to request additional information on a topic related to a meeting topic, please contact John. All technical comments should also be directed to John. You can reach him as follows:

John F. Burckardt, P. E.
c/o Boston Parks and Recreation
1010 Massachusetts Avenue
Boston, MA 02118

Phone: (617) 635-4505 x 6517
Fax: (617) 635-3256
E-mail: jburckardt@ci.boston.ma.us

Procedural Information:

Meeting Notices: The Boston Parks and Recreation Department will send out meeting notices in advance of each meeting. These notices will include the meeting agenda. From time to time, the notices may also include "read ahead" information, which will assist you in your preparation for the meeting.

Meeting Summaries: After each CAC meeting, a Meeting Summary will be distributed. The Summaries will contain an outline of the meeting topics and a brief summary of discussions. They will not attempt to describe in detail the discussions, but the consensus of the group and follow-up action items.

Once the Meeting Summary is distributed, CAC members will have 7 calendar days to review and submit written comments on the Summary. Written comments should be directed to John Burckardt and submitted by fax or e-mail. (See fax number and e-mail address on the other side.) Comments must be written, to assure accuracy. The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.

Requests for Information: CAC members are invited to request additional information or submit questions to the Department and the consulting engineers to aid in the review of the project issues. These requests need to be in writing and submitted within one week after the CAC meeting. Requested information will be distributed to the entire CAC. The distribution may be included with the meeting notice, or it may be distributed at a CAC meeting. Please contact John Burckardt to make your information request.

Project Update:

Field Work: You may notice surveyors and wetlands specialists already at work along the Muddy River and the Fens. This is the beginnings of the work by our design consultant team. These professionals will provide information on baseline conditions such as topography, precise locations of trees, and establishing the boundaries of the wetland resource areas. This work will continue into the springtime.

Emerald Necklace
Citizen's Advisory Committee
Egan Research Center, Northeastern University
Room 240 – Raytheon Amphitheater
Thursday, March 30, 2000
6:00p.m. - 8:30p.m
Agenda

I. Welcome, Scheduling & Other Administration Issues

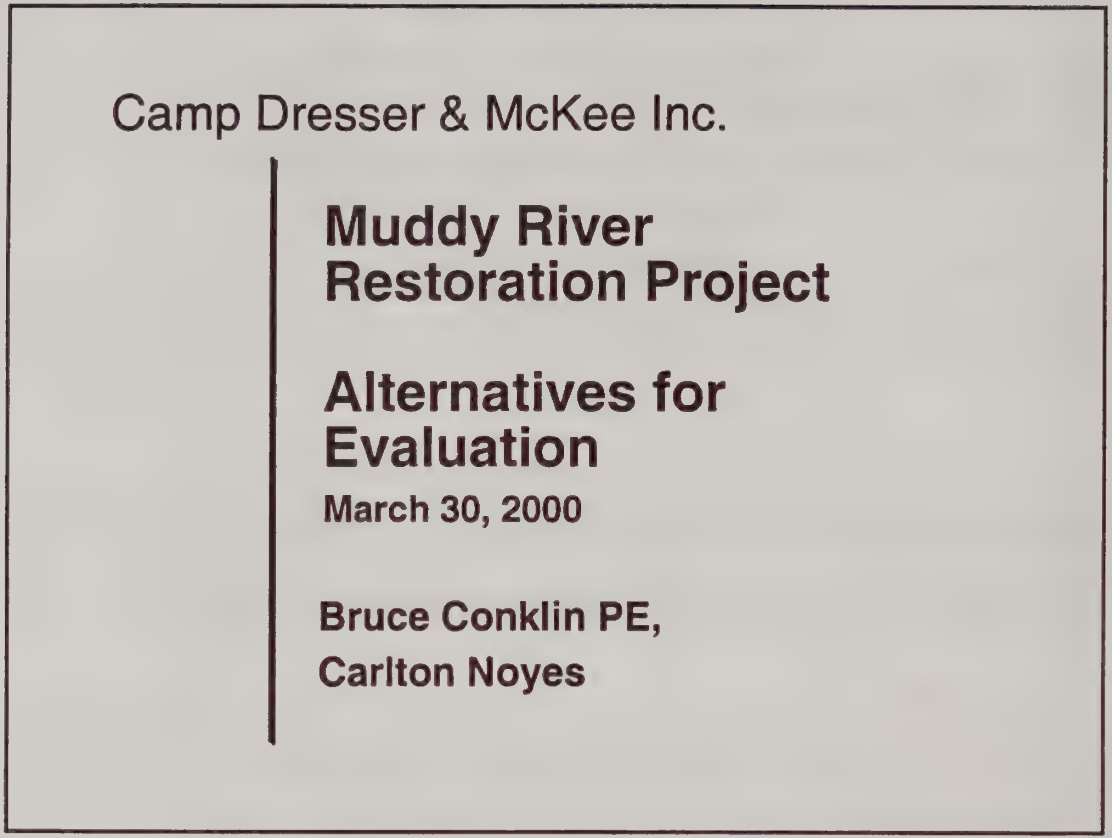
***Fredie Kay**, MA Office of Dispute Resolution, CAC Facilitator*

II. Consultant (Camp, Dresser & McKee) Presentation:
Project Alternatives (including Charlesgate)
Regulatory/Technical aspects

Bruce R. Conklin, P.E., Vice President
CDM/Camp Dresser & McKee Inc.

Carlton L. Noyes, Sr. Environmental Scientist
Jason M. Cortell And Associates Inc.

III. Questions and Answers, Wrap Up



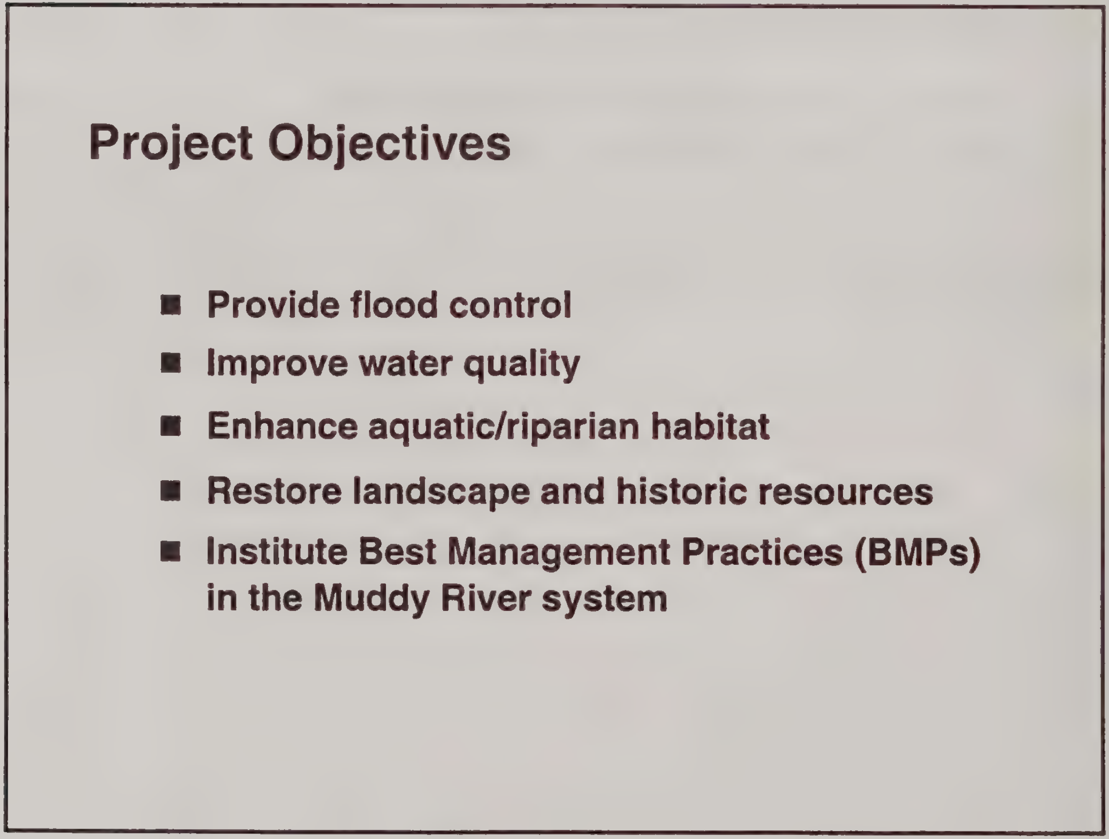
Camp Dresser & McKee Inc.

Muddy River Restoration Project

Alternatives for Evaluation

March 30, 2000

Bruce Conklin PE,
Carlton Noyes



Project Objectives

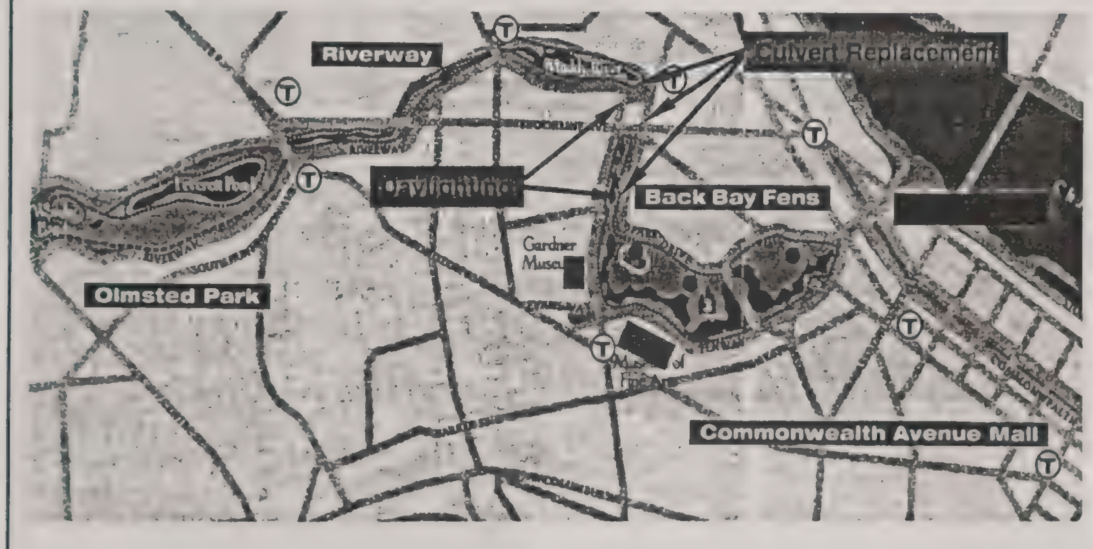
- Provide flood control
- Improve water quality
- Enhance aquatic/riparian habitat
- Restore landscape and historic resources
- Institute Best Management Practices (BMPs) in the Muddy River system

Project Objective:
Provide Flood Control (1 of 3)

Alternatives:

- Daylight culverted sections of the Muddy River (former Sears Lot, adjacent to Avenue de Louis Pasteur)
  - No action
  - Engineered channel
  - "Natural" replacement
- Culvert replacement (adjacent to former Sears Lot and Avenue de Louis Pasteur)
  - No action
  - Culvert enlargement
  - Jacked culvert

Phase 1 Project Area



Project Objective:

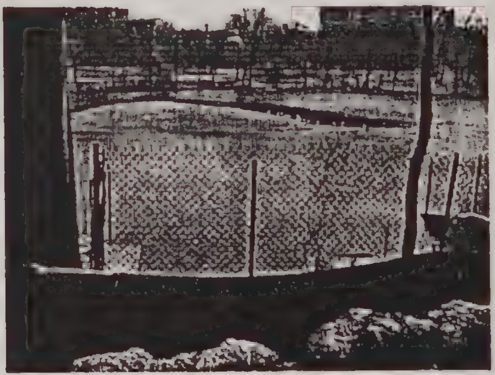
Provide Flood Control (2 of 3)

- Open channel areas of Muddy River
  - No Action
  - Dredge the Charlesgate Area only
  - Partially dredge a flood control channel in the Back Bay Fens and spot dredging in the Riverway
  - Fully dredge the Back Bay Fens, Riverway and other sections of the Muddy River to Ward's Pond
- Flood proofing of property
- *Upstream storage*

Dredging Sediments

Charlesgate Channel

Leverett Pond



Project Objective:
Provide Flood Control (3 of 3)

- Alternative types of dredging
  - Dredge in the dry
  - Drag line dredging
  - Environmental clamshell bucket dredging
  - Gradall dredging
  - Conventional hydraulic dredging
  - High solids hydraulic dredging (Toyo-type pump)

Dredging Methods

Mudcat Dredge

Dewatering Sediments

Toyo Pump

Project Objective:
Improve Water Quality (1 of 2)

Alternatives:

- No Action
- Dredging
    - Reduces heavy metals and organic compounds in sediments
    - Reduces oxygen demand and nutrient recycling
- Point Source Control
    - Eliminate illegal sewer connections

      Reduces coliform, nutrients and solids; increases dissolved oxygen
    - Sewer separation

      Reduces coliform, nutrients and solids; increases dissolved oxygen

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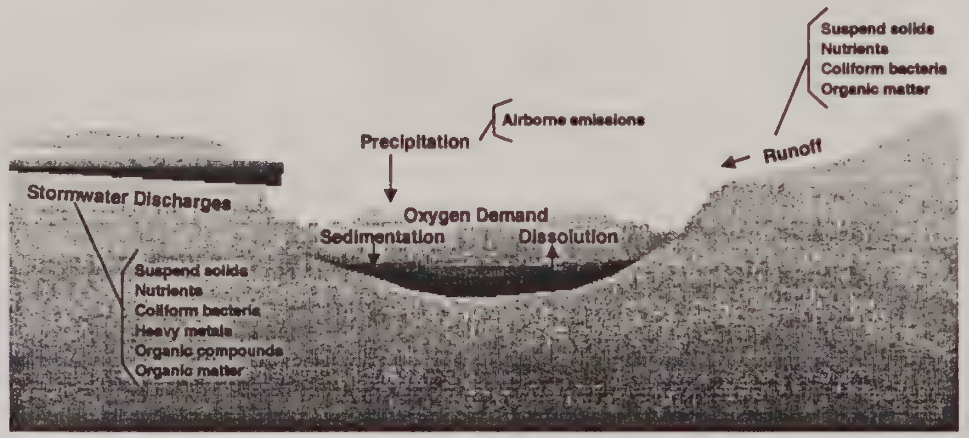
Water Quality Degradation



Project Objective:
Improve Water Quality (2 of 2)

- Implement Best Management Practices (non-point source control)
    - Reduces suspended solids loading and floatables
    - Reduce discharges of runoff contaminants
    - Increases dissolved oxygen
- Flow Augmentation *(Charles River, Stony Brook, Jamacia Pond, Chestnut Hill, Brookline Reservoirs)*
    - Increases dissolved oxygen
- In-Stream Aeration *(Review Suitable Technologies)*
    - Increases dissolved oxygen
- Off-Stream Aeration *(Review Suitable Technologies)*
    - Increases dissolved oxygen
- *Harvesting Aquatic Vegetation*

Project Objective:
Enhance Aquatic/Riparian Habitat (1 of 2)

Alternatives:

- No Action
- Dredging
    - Reduces bio-accumulation in endemic species
    - Increases aquatic/riparian habitat
- Point Source Control
    - Reduces coliform, nutrients and solids; increases dissolved oxygen
- Implement Best Management Practices (non-point source control)
    - Reduces suspended solids loading and discharges of runoff contaminants improving aquatic habitat
    - Increases dissolved oxygen

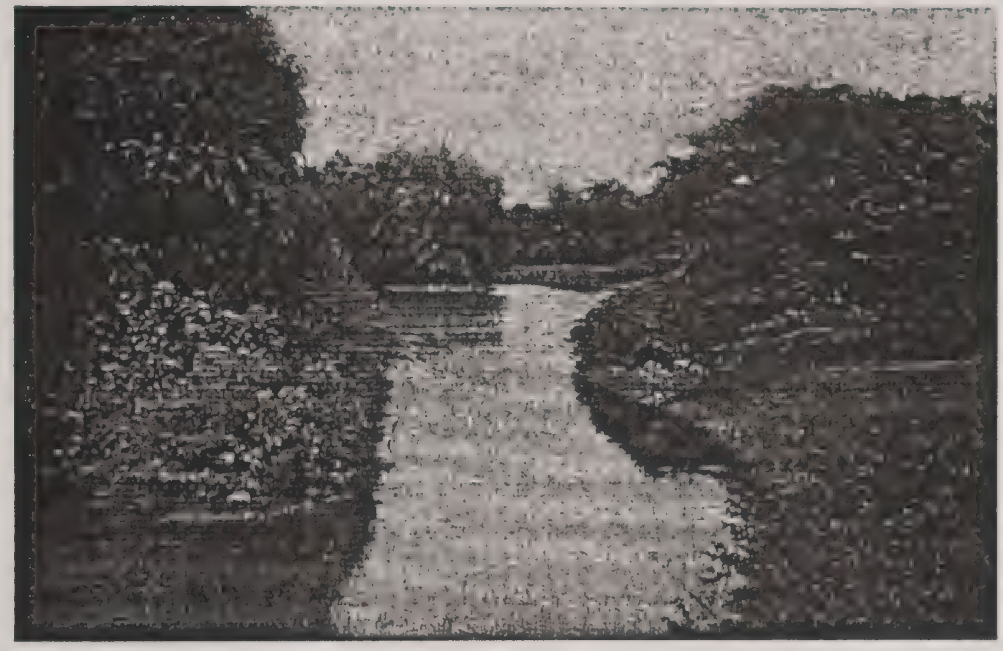
Project Objective:

Enhance Aquatic/Riparian Habitat (2 of 2)

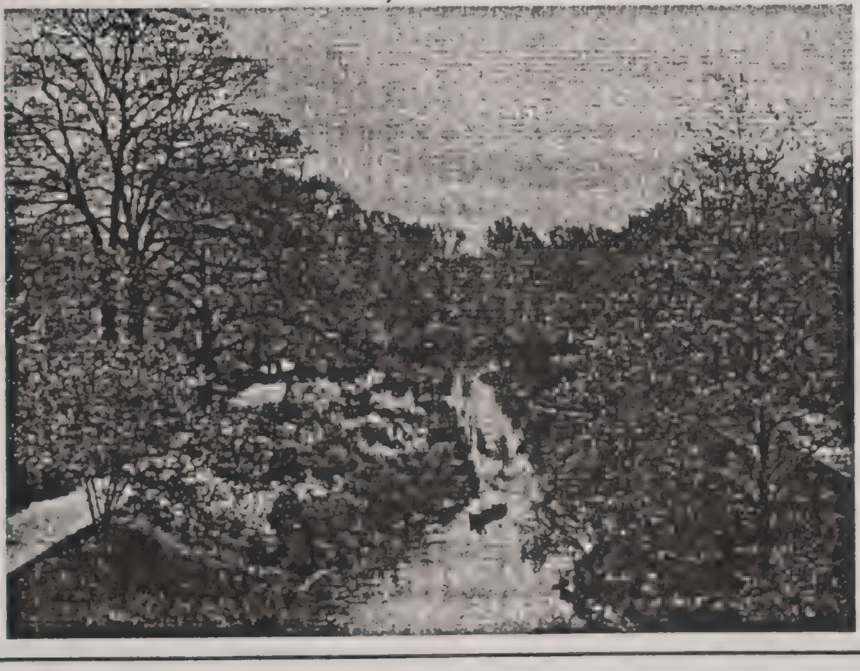
- Flow Augmentation
  - Increases dissolved oxygen improving aquatic habitat
- In-Stream Aeration
  - Increases dissolved oxygen improving aquatic habitat
- Off-Stream Aeration
  - Increases dissolved oxygen improving aquatic habitat
- Remove non-native invasive species
  - Increases bio-diversity
- Plant Wetland and Riparian Vegetation
  - Increases species bio-diversity, habitat and edge effect
- Restore historic islands
  - Protects riparian habitat

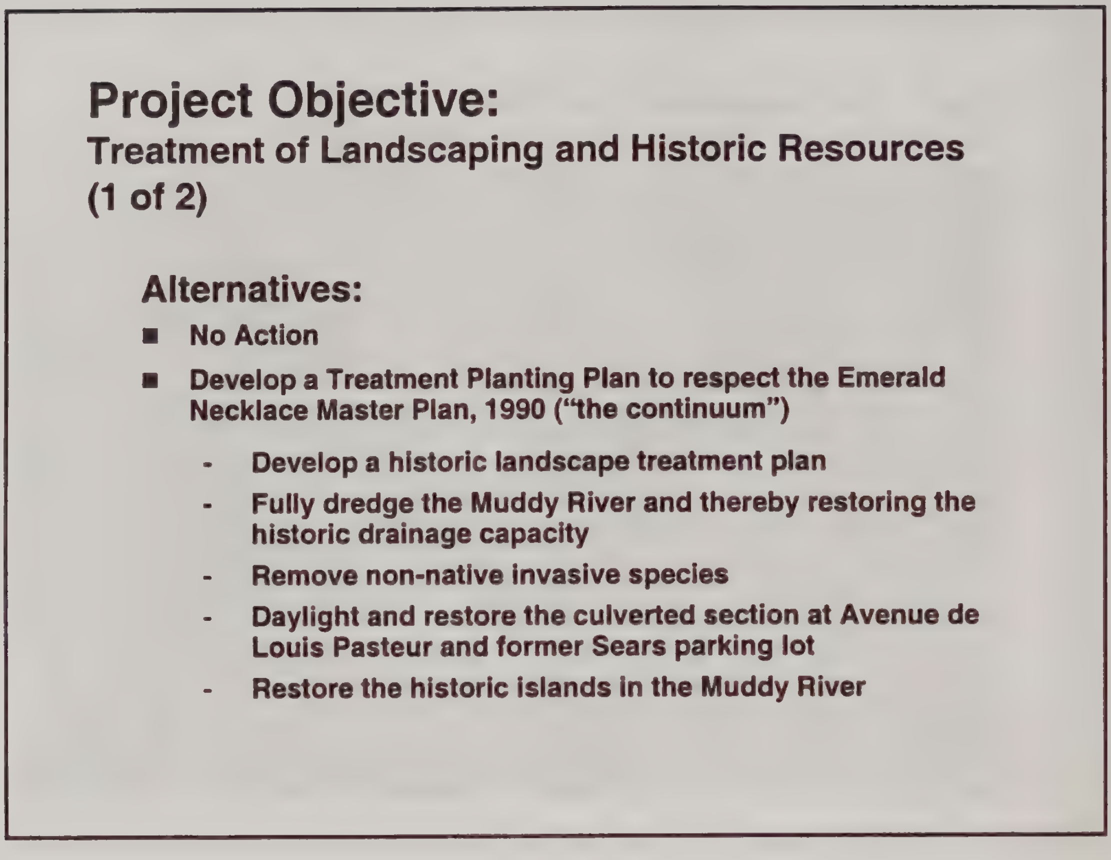
1924-25 - Water vegetation has aquatic and upland plantings, (Thomas Ellison, photographer, Frederick Law Olmsted National Historic Site).

1907 - View downstream from Chapel St. Bridge (American Landscape Architecture, 1924).



1920 - Boston Park System Muddy River Improvement. View upstream from the Longwood Avenue Bridge, twenty-eight years after construction (Thomas Ellison, photographer, Frederick Law Olmsted National Historic Site).



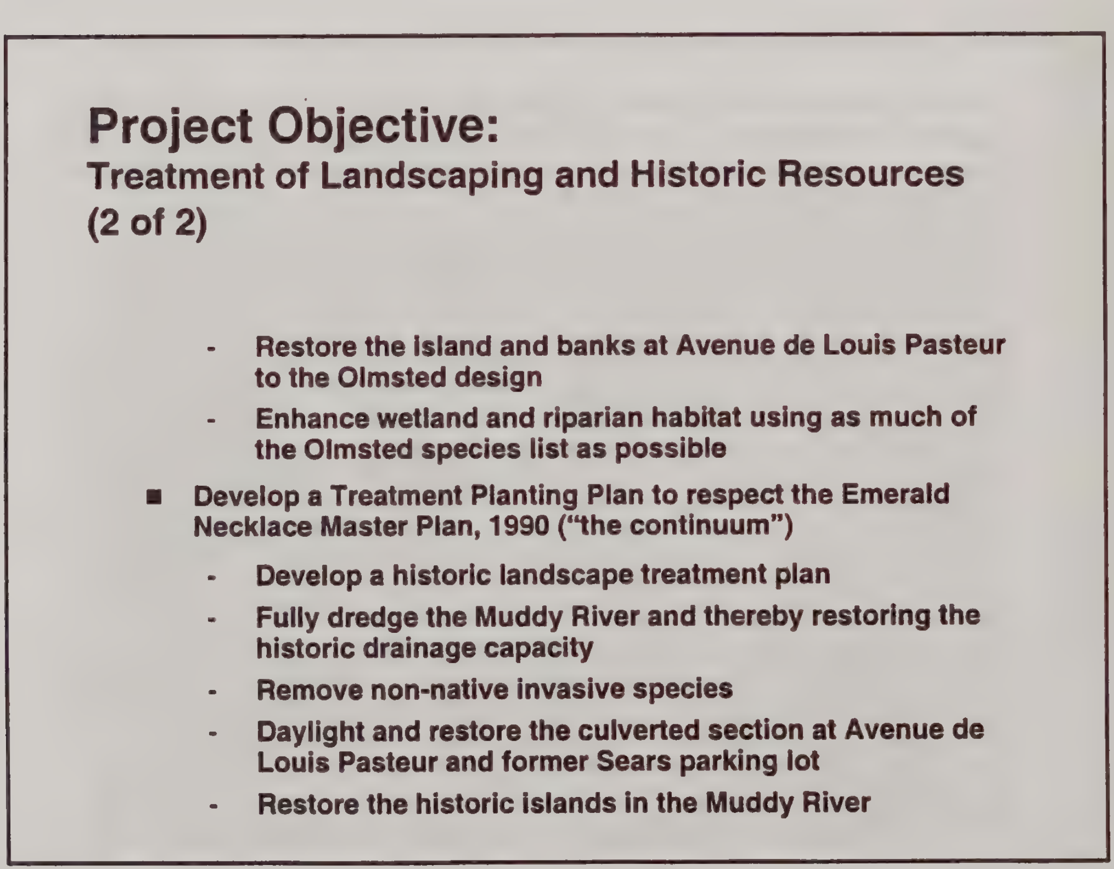


Project Objective:

Treatment of Landscaping and Historic Resources (1 of 2)

Alternatives:

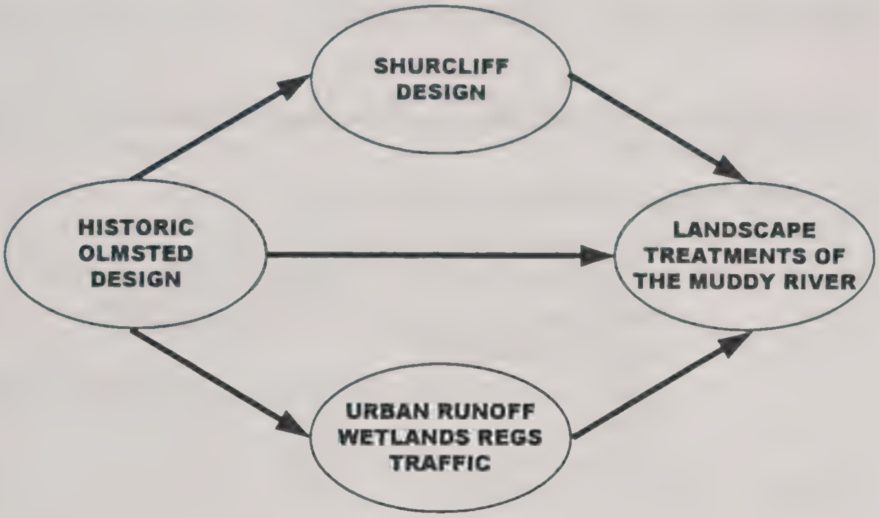
- No Action
- Develop a Treatment Planting Plan to respect the Emerald Necklace Master Plan, 1990 (“the continuum”)
  - Develop a historic landscape treatment plan
  - Fully dredge the Muddy River and thereby restoring the historic drainage capacity
  - Remove non-native invasive species
  - Daylight and restore the culverted section at Avenue de Louis Pasteur and former Sears parking lot
  - Restore the historic islands in the Muddy River



Project Objective:

Treatment of Landscaping and Historic Resources (2 of 2)

  - Restore the island and banks at Avenue de Louis Pasteur to the Olmsted design
  - Enhance wetland and riparian habitat using as much of the Olmsted species list as possible
- Develop a Treatment Planting Plan to respect the Emerald Necklace Master Plan, 1990 (“the continuum”)
  - Develop a historic landscape treatment plan
  - Fully dredge the Muddy River and thereby restoring the historic drainage capacity
  - Remove non-native invasive species
  - Daylight and restore the culverted section at Avenue de Louis Pasteur and former Sears parking lot
  - Restore the historic islands in the Muddy River



SHURCLIFF DESIGN

HISTORIC OLMSTED DESIGN

LANDSCAPE TREATMENTS OF THE MUDDY RIVER

URBAN RUNOFF
WETLANDS REGS
TRAFFIC

Project Objective:

Institute Best Management Practices (BMPs) in the Muddy River System (1 of 3)

Alternatives:

- No Action
- Implement Best Management Practices - Source Control Options
  - Public education (NS)
  - Material disposal and recycling (NS)
  - Spill prevention - Underground and above ground storage tank program (NS)
  - Illegal dumping control (NS)
  - Illicit connection control
    Detection/removal (S/NS)
  - *Incentives for private BMPs*
  - *Increase permeable surface in watershed*

NS - Non structural options, S - Structural options

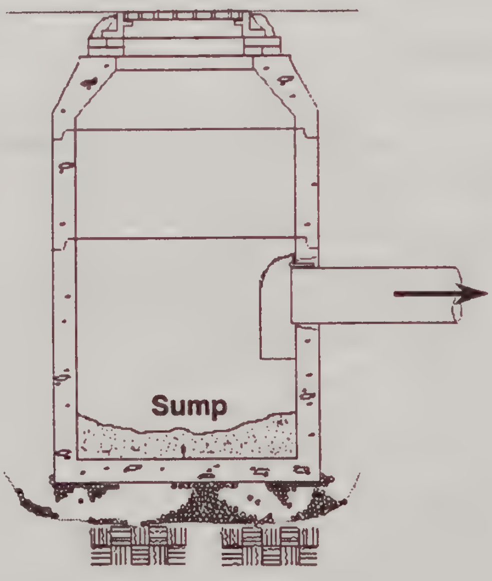
Project Objective:

Institute Best Management Practices (BMPs) in the Muddy River System (2 of 3)

- Implement Best Management Practices - Source Control Options (continued)
  - Street/storm drain maintenance
    - Repair/replace roadway curbing (S)
    - Repair/replace sunken roadway catch basins (S)
    - Install deep sump drop inlets on roadways (S)
    - Repair washouts (S)
    - Develop catch basin cleaning and maintenance program (NS)
    - Develop street sweeping program (NS)

NS - Non structural options, S - Structural options

Sediment Storing Catch Basin

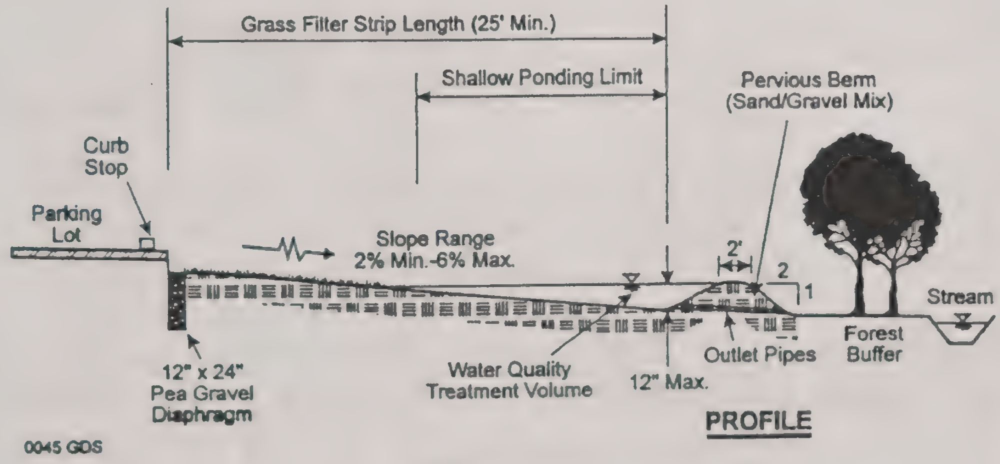


Project Objective:
Institute Best Management Practices (BMPs) in the Muddy River System (3 of 3)

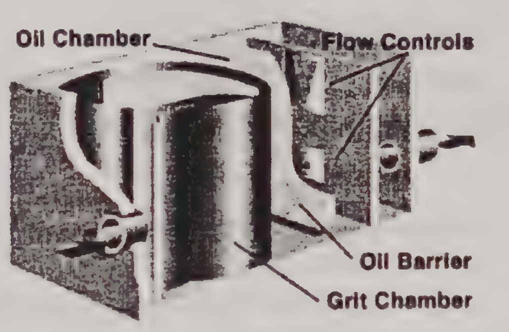
- Implement Best Management Practices - Treatment Control Options (S)
  - Install solids separation devices on existing storm sewers
  - Install solids separation devices on new or retrofitted storm sewers
  - Install wet or dry detention basins
  - Install forebays
  - Install infiltration trenches
  - Water quality swales
  - Install in-line sedimentation basins during dredging
- *Enforcement and Monitoring of BMPs*

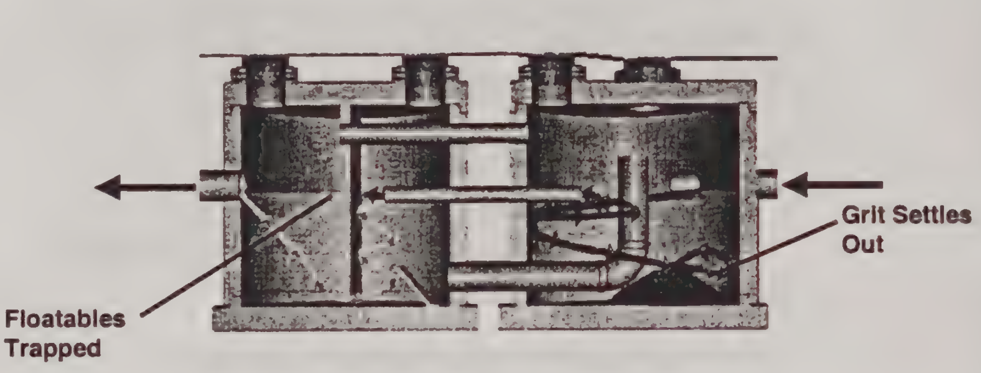
NS - Non structural options, S - Structural options

Typical Water Quality Swale


Grass Filter Strip Length (25' Min.)
Shallow Ponding Limit
Pervious Berm (Sand/Gravel Mix)
Curb Stop
Parking Lot
Slope Range 2% Min.-6% Max.
2'
2
1
Stream
Forest Buffer
Outlet Pipes
12" x 24" Pea Gravel Diaphragm
Water Quality Treatment Volume
12" Max.
PROFILE
0045 GDS

Typical End of Pipe Treatment Devices





Alternatives That Impact Objectives

Alternatives	Provide Flood Control	Improve Water Quality	Enhance Aquatic/Riparian Habitat	Treat Landscape/Historic Resources	Institute BMPs
No Action					
Daylight culvert sections	●				●
Culvert replacement	●				
Dredge Charlesgate area	●		●		
Partially dredge the river	●	●	●		
Fully dredge the river	●	●	●	●	
Flood proofing of property	●				
Point source controls		●	●		●
Flow augmentation		●	●		
In-stream aeration		●	●		
Off-stream aeration		●	●		
Remove non-native invasive species	●		●	●	
Plant wetland/riparian vegetation			●	●	
Restore historic islands			●	●	
Develop treatment plan respecting master plan			●	●	
Develop treatment plan respecting periods of significance			●	●	
Source control BMPs		●			●
Treatment control BMPs		●			●

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – March 30, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Scheduling & Other Administrative Issues

Fredie Kay, MA Office of Dispute Resolution, CAC Facilitator

II Consultant (Camp Dresser & McKee) Presentation:
Project Alternatives (including Charlesgate)
Regulatory/Technical Aspects

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

Carlton L. Noyes, Sr. Environmental Scientist
Jason M. Cortell and Associates Inc.

III Questions and Answers, Wrap Up

Summary

I Welcome, Scheduling & Other Administrative Issues

Fredie Kay opened the meeting and explained how the meeting marked the beginning of a new phase – because the consultants are now on-board and working on the project. She discussed the fact that up until now the CAC meetings have primarily focused on background presentations about the Emerald Necklace and the CAC. Ms. Kay also highlighted the fact that at the last CAC meeting (February 28, 2000):

- We met the proponent's (i.e., Boston Parks & Recreation Department and the Town of Brookline) design consultants, Camp Dresser & McKee Inc. (CDM) and those working with them including Jason M. Cortell and Associates and Pressley Associates;
- CDM presented a list of topics for our next meetings, which tracks the topics that must be included in the Environmental Impact report (EIR), as required by the Certificate of the Secretary of Environmental Affairs on the Environmental Notification Form (ENF).

Project Objective:

List of Environmental Permits/Approvals

- Notice of Intent/Order of Conditions (310 CMR 10.00) - Boston & Brookline Conservation Commissions
- Water Quality Certification (314 CMR 9.00) - Department of Environmental Protection
- Department of the Army Permit (Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act) - Army Corps of Engineers
- Ch.91 Waterways Licensing (310 CMR 9.00) - Department of Environmental Protection
- National Pollutant Discharge Elimination System Permit (CFR 124.15) - Environmental Protection Agency
- Historic Preservation Act (Sect 106)
    - Massachusetts Historic Commission
    - Boston Landmarks
    - Brookline Preservation

Questions and Answers

Ms. Kay emphasized that as discussed at the last meeting by Jay Wickersham, Director of the Massachusetts Environmental Policy Act (MEPA) Office, the Secretary appointed the members of the Citizens Advisory Committee to give the Secretary comments, reactions, suggestions, etc. regarding the Draft Environmental Impact Report (DEIR) as submitted by the proponents.

Ms. Kay noted that the Secretary will be particularly interested in whether the CAC supports the DEIR – and the goal is for consensus where possible so that the project can move more quickly to implementation. However, the Secretary is also interested in knowing where and why the CAC disagrees with the DEIR. The CAC will receive the DEIR at least 30 days before it is submitted to the Secretary and it will be a considerable task to review the document and draft the CAC's response(s) to it.

Further, Ms. Kay highlighted, the Secretary anticipated that through this process and these meetings, the CAC members would have an opportunity to ask questions, give comments, and enter into a discussion with the project proponent (Boston Parks & Recreation Department and Town of Brookline) *as it develops the DEIR*. Therefore, if there are differences in views, the CAC might be able to explore options that would be acceptable for both the CAC and the project proponent. Thus, Ms. Kay explained, this CAC process is the CAC's opportunity to impact and influence what will ultimately be reflected in the DEIR.

Therefore, these upcoming meetings, which will be devoted to the topics that will be included in the DEIR, will be extremely important. It is at these meetings that members of the CAC will have an opportunity to ask questions, comment, and explore options with the consultants – and thus possibly impact the DEIR. Ideally, differences would be worked out in the meetings and the DEIR would reflect the compromises reached. The difficulty will be ensuring that all 28 members of the CAC have an opportunity to ask questions, make comments, etc.

A discussion followed which led to the following conclusions:

1. Members of the CAC need to respect each other's right to offer their opinions, and therefore will need to take turns talking, so that everyone on the CAC will have an opportunity to comment and participate.

2. Due to: 1) the large number of CAC members and the importance of enabling all members to participate, 2) the CAC's considerable task, and 3) the tight timeframe for both this project as a whole and the CAC meetings themselves, discussion during the CAC meetings will be limited to members of the CAC, EXCEPT that the 10 minutes prior to the conclusion of each meeting will be reserved for questions and comments from the general public who are welcome at the CAC meetings. The CAC agreed on the importance of leaving a full 10 minutes at the end of the meeting for questions and comments from non-CAC members so that the general public has an opportunity to provide input at the meetings.

3. To ensure that all members of the 28-member CAC have an opportunity to comment of ask questions, Ms. Kay asked, and the CAC agreed, that members wishing to speak would raise their hands and wait to be recognized before speaking.

The question of how the CAC is to achieve consensus on specific issues was also raised. Laura Rome of MEPA responded that other CACs have handled this issue in different ways. In some cases, Ms. Rome explained that the project proponent was able to provide the CAC with specific sections of the DEIR document prior to its formal submittal. This process enables the CAC to review substantive information in advance, which is often helpful when trying to achieve consensus.

The CDM team responded that for some sections of the DEIR document, it may be possible to provide a preliminary draft to the CAC. For other sections, particularly the sections that cover the evaluation of environmental impacts, this may not be possible given the schedule constraints.

There were comments by CAC members regarding how consensus will be identified and documented. Several members felt that on some issues there will be general support and agreement and on other issues there may be a difference of opinions and positions. In those cases, it was suggested that a majority and minority view be articulated and documented for the record.

A question was raised as to how the CAC would establish and conduct the post-meeting exchange of written commentary among members. Responses and written comments can be transmitted to John Burckardt, Boston Parks Department's Project Manager. Mr. Burckardt will then distribute the comments to all CAC members. The Boston Parks and Recreation Department requested that written comments on specific issues be limited to 2-3 pages on a specific topic, if possible.

The topic of a project web page was discussed. Fran Beatty noted that the project web page is under development. In its first stage, the web page will offer posted project information, such as meeting schedule and summary notes. As future development proceeds, measures for CAC discussion will be identified.

A question was raised as to whether there should be sub-committees to facilitate the review of the DEIR. A discussion followed including a comment from Laura Rome that the MEPA Office has found that CACs generally work best when they work as a whole. She explained that this is because the make-up of the CACs is intentionally broad and the Secretary is interested in having all members of the CAC fully participated – i.e., participating in all the discussions. It was agreed that the CAC would work together as a whole for now and revisit this issue again as necessary.

Fredie Kay then announced that 3-ring binders had been prepared for all members of the CAC. Fran Beatty explained that the purpose of the binders is for the CAC members to store presentation materials, meeting summaries, and other information and documentation that is distributed to them during the project. Meeting handout materials and meeting summaries will also be available to members of the public at each meeting.

CAC Meeting Schedule
Ms. Kay transitioned to the topic of the CAC meeting schedule. Bruce Conklin explained that the master project schedule is complete and that may necessitate minor modifications to the CAC meeting schedule.

Mr. Conklin explained that the DEIR presentation to the CAC would take place in March 2001. He added that this date will enable the consultant team to complete all the tasks associated with the DEIR and provide substantive information on a monthly basis to the CAC in advance of each CAC meeting. Mr. Conklin explained that the alternative to this approach would be to compress the CAC meeting schedule in the Fall and hold more frequent CAC meetings between September and December.

There was considerable discussion between CAC members and the project team regarding the schedule. Some CAC members commented that they would like to receive materials in advance of each meeting. Members explained that this will allow them to be better prepared to provide substantive input on the topic/issue at each meeting. However, CAC members also said that they do not want the schedule for publication of the DEIR delayed in order to accommodate their desire to have meeting materials distributed prior to each CAC meeting.

Several schedule modifications were proposed and discussed, including ones that would extend the date of the DEIR submittal by at least a month. CAC members again expressed desire not to extend schedule and committed to attending more frequent CAC meetings in the Fall in order to stay on schedule for a DEIR submittal earlier than March 2000

The CAC agreed that the scheduled April meeting will be moved to May 16 at a location to be determined. Furthermore, Mr. Conklin agreed that the CDM project team will review the master schedule and present a revised CAC meeting schedule that will likely include more frequent CAC meetings in order to compress the schedule and submit the DEIR to the CAC earlier than March 2000.

A revised CAC meeting schedule will be distributed to the CAC prior to the next meeting.

II Consultant (Camp Dresser & McKee) Presentation: Project Alternatives (including Charlesgate)

A copy of the presentation made by the Camp Dresser & McKee team is included as Attachment 2.

Mr. Conklin began the presentation and explained that the purpose of this meeting is to develop a list of alternatives to meet the project objectives. Mr. Conklin explained that the project team developed a series of project alternatives that would meet the project objectives. They propose these alternatives be evaluated as part of the EIR process. In addition, if the CAC has additional alternatives, or would like to see some alternatives removed from the list, Mr. Conklin explained that the project team needs to know this information at this time.

[Please note that those additional alternatives proposed by the CAC and the public are indicated by italics in Attachment 2.]

Before Mr. Conklin and Carl Noyes presented the alternatives, Mr. Conklin explained that many of the proposed alternatives are inter-related and meet more than one of the project objectives. Mr. Conklin emphasized that the project team would not be discussing mitigation measures for each alternative at this meeting because these will be covered in detail in subsequent meetings.

Mr. Conklin and Mr. Noyes then went through the proposed alternatives for each of the project objectives:

- Provide flood control
- Improve water quality
- Enhance aquatic/riparian habitat
- Restore landscape and historic resources
- Institute Best Management Practices (BMPs) in the Muddy River system

Discussion

- ➢ A question was raised as to whether some of the daylighting options conflict with the historic restoration goal. The CDM team responded that some of the daylighting alternatives actually complement the landscape and historic resources restoration objective while others will conflict.

- ➢ The issue was raised of how to quantitatively measure and evaluate each alternative, and what is the quantifiable goal that is sought with respect to the improve flood control objective. The CDM team responded that there will be a quantitative evaluation of each project alternative as they relate to the project objectives, such as flood control. At this point, there is no benchmark or specific level of flood control reduction that the project team will be looking to meet. Regarding some of the water quality improvement alternatives, the quantitative goal or benchmark in some cases will be meeting permit requirements and other water quality regulations.

- ➢ The issue was raised over whether the project team would examine the temporal analysis of alternatives, that is, how the alternative will perform over time. For example, some alternatives, such as partial dredging, may quickly lose their benefit after they are completed. The CDM team responded that as part of the analysis of each alternative, the alternative's benefit over time will be assessed.

- ➢ It was explained to the CAC that the Emerald Necklace Master Plan is an integral part of the Secretary's Certificate and of the Memorandum of Agreement signed on November 4, 1999. All project components will be required to acknowledge and respect all historic resources in the Emerald Necklace.

Additional Alternatives for Consideration

At this point in the meeting, the forum was open to discuss other alternatives that the CAC requests be evaluated. Each requested alternative was identified but the merits of each were not discussed. Listed below is a summary of the additional CAC requested alternatives.

Objective: Provide Flood Control

- Upstream Storage (e.g., storage within the watershed along one of the tributaries to the Muddy River)
- Removal of obstruction under Ipswich Street Bridge

Criteria: Sequencing
Implementation/Feasibility
Life Cycle Effectiveness

Objective: Improve Water Quality

- Review aeration technologies (e.g., rock-babbling areas, mechanical aeration, non-traditional methods, ranges of energy sources for mechanical aeration, and adding bends in the river)
- Flow augmentation by directing flow into the Muddy River from sources such as the Stony Brook conduit, Jamaica Pond, Chestnut Hill Reservoir or Brookline Reservoir
- Harvesting of aquatic vegetation, or, in general, use of plants that improve water quality

Objective: Enhance Aquatic/Riparian Habitat

Criteria: Benthic habitat impacts

Objective: Restore Landscape and Historic Resources

Note: the CAC discussed the following alternatives for this objective. In discussion, members of the CAC stressed the importance of the historic resources. The alternatives presented by the consultant team were:

- Develop a Treatment Plan to respect that Emerald Necklace Master Plan, 1990 ("the continuum")
- Develop a Treatment Plan to respect the Primary and Secondary Periods of Significance of the Parks

Objective: Multiple – Implementation and Evaluation of BMPs

- Forebays, locations and historic issues
- Incentive programs for BMP implementation by property owners
- Measures to increase permeable surface in watershed

Criteria: Enforcement and monitoring modalities of BMP implementation and Effectiveness

Other Alternatives-Related Discussion

- A question was raised regarding the alternative of better controlling the water level in the Charles River as a means of improving flood control in the Muddy River. Mr. Conklin stated that the project team will review this issue with the MDC. He added that CDM previously examined this issue when conducting hydraulic studies of the Muddy River for the Boston Water and Sewer Commission and EOEA. Based on this work, CDM had noted that the backwater effect of the Charles is not a critical factor *provided* that improvements are made to the culverts so that they can handle storm flows. However, the project team will provide the CAC with a summary of the protocols and operation of the Charles River Dam as part of its hydraulic analysis of project alternatives.

- The suggestion was made that the project team consider an additional flow augmentation alternative that involves pumping water from Chestnut Hill or Brookline Reservoirs to the Muddy River. The project team will consider the feasibility of this alternative.

III Questions and Answers, Wrap Up

There were no additional questions or comments.

Follow-Up Actions

1. The project team will provide the CAC with a revised preliminary meeting schedule.

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for Tuesday, May 16, 2000. Location TBD.

[Subsequent to the meeting, the location was determined as the Faculty Center at Northeastern University, located at Kerr Hall, 96 Fenway in Boston.]

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – CDM Consultant Team Presentation

Attachment 1
MAR. 30, 2000

PAGE 1 of 2

EMERALD NECKLACE CAC

SIGN IN

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PAGE 2 of 2

MAR. 30, 2000

SIGN-IN

NAME	AFFILIATION/ADDRESS	PHONE	E-MAI
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Megan Raymond	LEC Environmental Consultants	908 84759 0050	kcone@ti
Paul Lelito	LEC Environmental Consultants	"	"
Carl Noyes	Cortell Assoc.		
John Burckardt	PB/c/o Boston Parks	635-4505	jburckardt@ ci.boston.ma.

BOSTON
.homas M. Menino, Mayor

MUDDY RIVER RESTORATION PROJECT

Date: 8 May 2000

To: Emerald Necklace Citizens Advisory Committee

From: Fran Beatty, Sr. Landscape Architect for Historic Parks

Re: Muddy River Project Funding

As you may know, the Army Corp of Engineers has been requested by Congress to review the The Emerald Necklace Environmental Notification Form dated January 1999. Their directive requires the Corp to analyze the plan holistically and determine which parts of the improvement program fits within their legislative mission. Congress has directed the Corp to report their findings by June 2000.

The difference with this particular review from previous studies is that the Corp will be including the flooding effects in the Stony Brook watershed and the 1996 damages to the MBTA Kenmore station in their cost/benefit analysis.

At the request of Representative Capuano's office, the City of Boston and the Town of Brookline will be submitting support letters to Congress in anticipation of a Corps report favorable to participation in the Muddy River Restoration Project. (At this point in time, we do not know the degree of Corp involvement nor what aspects of the project they may be able to participate in.) The letters support the authorization and the appropriation of funds to the Corp.

I have attached proposed draft support letters for your consideration. Please forward all comments to me before the CAC meeting on May 16th. For those members who wish to sign these letters, I will be bringing the final letters to the May 16th meeting.

Thanks for your committed involvement in this important work.

Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

DRAFT

May 8, 2000

The Honorable Bud Shuster
Chairman
House Committee on Transportation and Infrastructure
2165 Rayburn House Office Building
Washington, DC 20515

Dear Mr. Chairman:

The Emerald Necklace and Muddy River (the Muddy River), situated between Boston and Brookline, Massachusetts, needs full authorization for full design and construction as outlined in the Boston Parks and Recreation Department Master Plan, January 1999 (the Master Plan) in the Water Resources Development Act (WRDA) 2000.

Restoration of the Muddy River is one of the most important urban flood management and mitigation projects in our nation. A Citizen's Advisory Committee has been established by the Commonwealth of Massachusetts to work closely with the City of Boston , the Town of Brookline, local community groups, and businesses to determine the most environmentally sound and cost effective plan that would help to prevent future flooding of Boston's historic Fenway community, Brookline's neighborhoods, and to restore the proper and intended flow of the Muddy River.

To properly evaluate the Master Plan proposal, Congress requested the Army Corps to thoroughly consider the Master Plan for eligibility as an Army Corps led project. To properly address the flooding, only a proposal as comprehensive as the Master Plan can properly protect against additional expected economic and historic damages. The nature and scope of the Master Plan demands Army Corps leadership since the Corps is the most appropriate federal agency to head the larger and permanent mitigation and restoration proposal detailed in the plan.

We therefore ask that you authorize the Emerald Necklace and Muddy River for full design and construction.

We thank you for your attention to this project, which is critically important to preserve one of our nation's most historic landscape and community resources, and ensure its environmental and economic vitality.

Sincerely,
Emerald Necklace Citizen's Advisory Committee

May 8, 2000

DRAFT

The Honorable Ron Packard
Chairman
Committee on Appropriations
Subcomittee on Energy and Water Development
U.S. House of Representatives
2362B Rayburn House Office Building
Washington, DC 20515

Dear Mr. Chairman:

The Emerald Necklace and Muddy River (the Muddy River), situated between Boston and Brookline, Massachusetts, needs a full appropriation for full design and construction as outlined in the Boston Parks and Recreation Department Master Plan, January 1999 (the Master Plan) in the Water Resources Development Act (WRDA) 2000.

Restoration of the Muddy River is one of the most important urban flood management and mitigation projects in our nation. A Citizen's Advisory Committee has been established by the Commonwealth of Massachusetts to work closely with the City of Boston , the Town of Brookline, local community groups, and businesses to determine the most environmentally sound and cost effective plan that would help to prevent future flooding of Boston's historic Fenway community, Brookline's neighborhoods, and to restore the proper and intended flow of the Muddy River.

To properly evaluate the Master Plan proposal, Congress requested the Army Corps to thoroughly consider the Master Plan for eligibility as an Army Corps led project. To properly address the flooding, only a proposal as comprehensive as the Master Plan can properly protect against additional expected economic and historic damages. The nature and scope of the Master Plan demands Army Corps leadership since the Corps is the most appropriate federal agency to head the larger and permanent mitigation and restoration proposal detailed in the plan.

We therefore ask that you appropriate $1,000,000 to the Emerald Necklace and Muddy River for full design and construction.

We thank you for your attention to this project, which is critically important to preserve one of our nation's most historic landscape and community resources, and ensure its environmental and economic vitality.

Sincerely,
Emerald Necklace Citizen's Advisory Committee

MUDDY RIVER
SUPPORT LETTERS FOR
FUNDING

LEGISLATIVE
ADDRESSEES

The names to send to authorizers for full authorization of the project are as follows:

The Honorable Bud Shuster
Chairman
Committee on Transportation and Infrastructure
U.S. House of Representatives
2165 Rayburn House Office Building
Washington, DC 20515

The Honorable James Oberstar
Ranking Member
Committe on Transportation and Infrastructure
U.S. House of Representatives
2163 Rayburn House Office Building
Washington, DC 20515

The Honorable Sherwood Boehlert
Chairman
Committe on Transportation and Infrastructure,
Subcommittee on Water Resources and Environment
U.S. House of Representatives
B-376 Rayburn House Office Building
Washington, DC 20515

The Honorable Robert Borski
Ranking Member
Committee on Transportation and Infrastructure,
Subcommittee on Water Resources and Environment
U.S. House of Representatives
B-375 Rayburn House Office Building
Washington, DC 20515

The Honorable Robert C. Smith
Chairman
Committee on Environment and Public Works
U.S. Senate
410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Max Baucus
Ranking Member
Committee on Environment and Public Works
U.S. Senate
456 Dirksen Senate Office Building
Washington, DC 20510

The Honorable George V. Voinovich
Chairman
Committee on Environment and Public Works,
Subcommittee on Transportation and Infrastructure
U.S. Senate
410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Max Baucus
Ranking Member
Committee on Environment and Public Works,
Subcommittee on Transportation and Infrastructure
U.S. Senate
508 Hart Senate Office Building
Washington, DC 20510

The names to send to appropriators for $1 million in FY 2001 are as follows:

The Honorable Ron Packard
Chairman
Committee on Appropriations,
Subcommittee on Energy and Water Development
U.S. House of Representatives
2362B Rayburn House Office Building
Washington, DC 20515

The Honorable Peter J. Visclosky
Ranking Member
Committee on Appropriations,
Subcommittee on Energy and Water Development
U.S. House of Representatives
1016 Longworth House Office Building
Washington, DC 20515

(I think it's unecessary to send to the chairman and ranking member of the full House Appropriations Committee)

The Honorable Pete V. Domenici
Chairman
Committee on Appropriations,
Subcommittee on Energy and Water Development
U.S. Senate
127 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Harry Reid
Ranking Member
Committee on Appropriations,
Subcommittee on Energy and Water Development
U.S. Senate
156 Dirksen Senate Office Building
Washington, DC 20510

BEST MANAGEMENT PRACTICES (BMPS)

READ-AHEAD MATERIAL

The implementation of Best Management Practices (BMPs) is necessary to improve water quality in the Muddy River and to reduce the volume of sediment that is washed into the river from the tributary storm drainage systems. The Secretary of Environmental Affairs, in writing the Certificate on the Environmental Notification Form (ENF), states that BMPs are necessary "to create and maintain high quality stormwater runoff, which will benefit both water quality and prevention of sedimentation." BMPs will prolong the effectiveness of the flood control work to be implemented under the Muddy River Restoration Project.

BMP implementation will occur throughout the 5.6-square mile watershed of the Muddy River. This includes public lands (streets, parks, parkways) maintained by various municipal and state agencies, such as Boston Water and Sewer Commission, Boston Parks & Recreation Department, Boston Public Works Department, Metropolitan District Commission, and the Brookline Department of Public Works. Each of these agencies already have some BMPs instituted.

The presentation at the CAC meeting will include a description of BMPs currently in place within the watershed, examples of BMPs in the planning stages, and a comparison to the BMP programs in other municipalities.

Read-Ahead Materials

Attached are materials on BMPs taken from the web pages of the US Environmental Projection Agency (EPA) and the City of Seattle, Washington. Please review prior to the meeting. We understand that many on the CAC may be very familiar with BMPs, while others may be less familiar. We offer the enclosure so that all members have the opportunity to become familiar with this topic.

Web Sites

For additional information, try the EPA's web page titled "Storm Water Best Management Practices (BMPs):" www.epa.gov/owmitnet/sw/bmps

Abbreviations & Glossary

Following are used on the EPA pages:

BOD	Biological Oxygen Demand
DOI	U. S. Department of the Interior
EDB	Ethlene dibromide -- a type of pesticide used in landscaping.
HHC	Household hazardous chemical
IPM	Integrated Pest Management
NOAA	National Oceanic and Atmospheric Administration of the U. S. Department of Commerce
NPDES	National Pollutant Discharge Elimination System
NPS	Non-point source
OSDS	On-site disposal systems
POTW	Publicly-Owned Treatment Works
SWPPP	Storm Water Pollution Prevention Plan
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency

NPS	Non-point source contamination or pollution cannot be traced to any single location where it occurs. Examples include runoff from lawns containing pesticides, sand and salt applied to roadways, or animal excrement. The opposite of a non-point source is a point source, such as a pipe the discharges into a river.
OSDS	On-site disposal systems, commonly know as "septic systems," include any type of system where domestic sewage is disposed of on-site. This is typically allowed only where public sewers do not exist. On-site disposal systems in Massachusetts fall under the regulations know as Title V.
POTW	Publicly-Owned Treatment Work – typically refers to a municipal wastewater treatment plans.

EPA Office of Wastewater Management

EPA United States Environmental Protection Agency
Office of Water

OFFICE OF WASTEWATER MANAGEMENT

Storm Water Best Management Practices (BMPs)

Storm Water Program
About the Program
MS4s
Industrial Activity
Construction Activity
Proposed Phase II
Resources
Contacts

Best Management Practices (BMPs) are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.

There is a wealth of information available through EPA documents and web sites on best management practices (BMPs) for controlling the quantity and quality of storm water runoff. Further references will be cited in the Storm Water Program bibliography.

EPA Documents:

Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, September 1992. EPA #832/R-92-005. Summary / full.[1]

Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices, September 1992. EPA #832/R-92-006. Summary / full.[1]

Storm Water Pollution Abatement Technologies, September 1994. EPA #W935 (Contact the Educational Resource Information Center (ERIC) at (800) 276-0462 or ericse@osu.edu).

Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters - Urban Chapter, January 1993. EPA #840/B-93-001c.[1]

Municipal Wastewater Management Facts Sheets: Storm Water Best Management Practices, September 1996. EPA #832/F-96-001.[1]

[1] To order the full document, contact EPA's Water Resources Center (WRC) at (202) 260-7786 or center.water-resource@epa.gov.

Web Sites:

The National Storm Water Best Management Practices Database helps users assess the appropriateness of storm water runoff BMPs under various conditions.

The Maryland Storm Water Design Manual provides comprehensive instruction on the many types and uses of storm water BMPs and their proper implementation.

The Seattle BMP page presents information on surface water quality and various best management practices.

The Storm Water Pollution Prevention Plans site summarizes the steps to start an industrial storm water pollution prevention plan, based on EPA's SWPPP Guidance and the State of New York's Storm Water permit for industrial activity.

Other useful storm water links are also available.

| Storm Water Program | NPDES | OWM | OW | EPA | Contact Us | Search | Disclai

This page was last updated on September 28, 1999.

EPA Office of Water – Watershed Protection

EPA United States Environmental Protection Agency
Office of Water

Watershed Protection home

NPS Home
What is NPS Pollution
NPS Categories
Pubs & Info Resources
Information for Students & Educators
Funding Opportunities
Outreach
Kids Page
CWA Section 319
CZARA Section 6217

A. Pollution Prevention Management Measure

Implement pollution prevention and education programs to reduce nonpoint source pollutants generated from the following activities, where applicable:

- **The improper storage, use, and disposal of household hazardous chemicals, including automobile fluids, pesticides, paints, solvents, etc.;**
- **Lawn and garden activities, including the application and disposal of lawn and garden care products, and the improper disposal of leaves and yard trimmings;**
- **Turf management on golf courses, parks, and recreational areas;**
- **Improper operation and maintenance of onsite disposal systems;**
- **Discharge of pollutants into storm drains including floatables, waste oil, and litter;**
- **Commercial activities including parking lots, gas stations, and other entities not under NPDES purview; and**
- **Improper disposal of pet excrement.**

1. Applicability

This management measure is intended to be applied by States to reduce the generation of nonpoint source pollution in all areas within the section 6217 management area. The adoption of the Pollution Prevention Management Measure does not exclude applicability of other management measures to those sources covered by this management measure. Under the Coastal Zone Act Reauthorization Amendments of 1990, States are subject to a number of requirements as they develop coastal NPS programs in conformity with this management measure and will have flexibility in doing so. The application of management measures by States is described more fully in *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*, published jointly by the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

2. Description

This management measure is intended to prevent and reduce NPS pollutant loadings generated from a variety of activities within urban areas not addressed by other management measures within Chapter 4. Source reduction is considered preferable over waste recycling for pollution reduction (DOI, 1991; USEPA, 1991). Everyday activities have the potential to contribute to nonpoint source pollutant loadings. Some of the major sources include households, garden and lawn care activities, turf grass management, diesel and gasoline vehicles, OSDS, illegal discharges to urban runoff conveyances, commercial activities, and pets and domesticated animals. These sources are described below. By reducing pollutant generation, adverse water quality impacts from these sources can be decreased.

a. Households

Everyday household activities generate numerous pollutants that may affect water quality. Common household NPS pollutants include paints, solvents, lawn and garden care products, detergents and cleansers, and automotive products such as antifreeze and oil. The use and disposal of these products are chronic sources of pollution (Puget Sound Water Quality Authority, 1991). Table 4-25 summarizes estimated pollutant loadings from various household chemicals that may contaminate runoff. These pollutants are typically introduced into the environment due to ignorance on the part of the user or the lack of proper disposal options. Storm drains are commonly mistaken for treatment systems, and significant loadings to waterbodies result from this misconception. Other wastes and chemicals are dumped directly onto the ground (Washington State Department of Ecology, 1990).

b. Improper Disposal of Used Oil

The improper disposal of used oil and antifreeze can significantly degrade surface waters. The Washington Department of Ecology estimated that over 4.5 million gallons of used oil are dumped in Washington State each year. Of this total, 2 million gallons eventually are discharged into the Puget Sound (USEPA, 1988). Such loadings can severely degrade surface waters. One quart of oil can contaminate up to 2 million gallons of drinking water; 4 quarts of oil can form an oil slick approximately 8 acres in size (University of Maryland Cooperative Extension Service, 1987).

c. Landscape Maintenance and Turf Management

The care of landscaped areas, including golf courses, can contribute significantly to nonpoint source pollutant loadings. The application of fertilizers and pesticides in coastal areas can be detrimental to surface waters. After a site is developed, a significant area of maintained landscape may be regularly treated with fertilizer and pesticides. Heavily landscaped areas include residential yards, golf courses, and parks. In the coastal zone, much residential development commonly is sited on unconsolidated coastal plain with sandy soils. Where such soils are present, frequent fertilization, pesticide application, and watering must occur to maintain turf grasses. Turf management programs and landscaping ordinances that require minimum maintenance and minimum disturbance or xeriscaping can effectively reduce these loadings.

In areas where nitrogen is a problem pollutant, measures to control the introduction of nitrogen into runoff and leachate are important. Several studies have been completed that demonstrate the leaching potential of nitrogen from turf. Researchers at Cornell University found that 60 percent of nitrogen applied to turf leached to ground water (Long Island Regional Planning Board, 1984). Shultz (1989) suggests that 50 percent of the nitrogen applications are leached out and not used by plants. A study completed by Exner and others (1991) showed that as much as 95 percent of nitrate applied in late August on an urban lawn was leached below the turf grass root zone. In coastal areas, where soils are highly permeable and ground water and surface waters are hydrologically connected, reduced applications of nutrients may be necessary to control subsurface flow of nutrients into surface waters.

A recent nonpoint source loading analysis (Cahill and Associates, 1991) indicated that 10 percent of the nitrogen and 4 percent of the phosphorus applied annually in a 193-square-mile area (an area approximately 10 miles by 20 miles) of maintained landscaped residential development end up in surface waters as the result of overapplication. A total of 512.7 tons of nitrogen and 49.4 tons of phosphorus enter surface waters from this area. These estimated pollutant delivery rates are conservative. Delivery rates in coastal areas with sandy soils may be much higher. Schultz (1989) found that over 50 percent of the nitrogen in fertilizer leaches from lawns when improperly applied. In addition, the proximity of sources to waterbodies may result in increased loadings. Where waterbodies are nitrogen- or phosphorus-limited, applications of fertilizers should be reduced or prohibited. Fertilizer control programs can effectively reduce nitrogen and phosphorus loadings by encouraging the proper application of nutrients. Fertilizer costs may also be reduced.

A study in Rhode Island concluded that medium-density residential development has the highest loading factor of pesticides and fertilizers of all land uses in the State (RIDEM, 1988). These results echoed the findings of research conducted on the Chesapeake Bay watershed that identified medium- and high-density residential development as having the highest loading factors for nitrogen and phosphorus in the Bay area (Chesapeake Bay Local Advisory Committee, 1989). Table 4-26 shows a summary of results from various studies quantifying application rates of household fertilizers. Table 4-27 summarizes recommended application rates.

Home use is estimated to account for 20 percent of pesticide use in the Puget Sound area, and household users often apply pesticides excessively or in too concentrated a formulation (PSWQA, 1991). The Puget Sound Water Quality Authority summarized available data in a 1990 issue paper on pesticides in the Puget Sound. This research revealed that 50 to 80 percent of all household users apply some form of pesticides for lawn and garden use. EPA Region 10 and the Puget Sound Water Quality Authority (PSWQA, 1990) reviewed data and surveyed pesticide use in 12 counties in the Puget Sound basin and concluded that household pesticide use in 1988 was greater than 213,000 pounds. Unnecessary pesticide loadings to surface waters may result from homeowner overapplication, poor knowledge of proper application techniques, or applications during grass dormancy. Both the PSWQA and the Virginia Cooperative Extension Survey (1991) have determined that such improper use commonly occurs.

Consideration of the potential for exposure and toxic effects of applied fertilizers and pesticides should be an important component of golf course policy decisions. Some of the technical issues concerning intensive management of turf grass include (1) extent of nutrient and pesticide applications, (2) chronic and acute toxicity to nontarget organisms, (3) potential for exposure of nontarget organisms to applied chemicals, (4) use of increasingly scarce water resources for irrigation, (5) potential off-site movement of fertilizers and pesticides, (6) effects of maintenance and storage facilities on soil and water quality, and (7) potential loss of and effects on wetlands resulting from construction and turf grass maintenance (Balogh and Walker, 1992).

While quantitative information is not currently available regarding the effectiveness of fertilizer and pesticide control measures, it can be assumed that application reductions will result in corresponding decreases in pollutant loadings. Table 4-28 *(15k)* provides guidance useful for reducing fertilizer and pesticide use. This guidance was developed by the Northern Virginia Soil and Water Conservation District, the Lake Barcroft Watershed Improvement District, the Northern Virginia Planning District Commission, and the Virginia Cooperative Extension service for use by commercial lawn care companies and households that choose to use commercial lawn care services. This advice, however, is useful for all turf grass management.

d. Yard Trimmings Management

Improper disposal of yard trimmings can lead to increased nutrient levels in runoff. Yard trimmings deposited on street corners may be washed down storm sewers and result in elevated nutrient loadings to surface waters. Proper management of yard trimmings and home composting can reduce the level of nutrients in runoff and decrease overall runoff volumes through the addition of humus to the soil. Increased levels of humus enhance soil permeability, decrease erodibility, and provide nutrients in a less soluble form than commercial fertilizers.

e. Improper Installation and Maintenance of Onsite Disposal Systems

As discussed in Section V of this chapter, failing or improperly sited or designed OSDS may contribute both pathogens and nutrients to surface waters. Many engineers, contractors, surveyors, drain-layers, sanitarians, OSDS installers, waste haulers, building inspectors, local and State officials, and owners of OSDS are insufficiently informed regarding the need for proper siting, design, and maintenance of onsite systems. While a number of States currently license OSDS installers and waste haulers in accordance with State health standards, these licensing procedures may be out-of-date. In addition, many of these standards address only limited health-related issues and do not address the complex joint issues of water quality and public health (Myers, 1991).

Many homeowners are unaware of proper OSDS operation and maintenance principles. They often do not know how frequently their septic tanks need to be pumped, what hydraulic load their systems can accommodate, and what should or should not be disposed of in their systems (Huang, 1983). Some homeowners use septic system cleaners containing substances that may contaminate ground water, may provide little to no benefit to the OSDS, and may even be harmful to the system (RIDEM, 1988). Public education programs can help homeowners to prepare, operate, and maintain OSDS and thus help to ensure the continued pollutant removal effectiveness of the OSDS. A variety of brochures and other educational materials regarding OSDS have already been developed, and these materials have been used in many areas to educate the general public about proper OSDS operation and maintenance (e.g., the Chesapeake Bay Region, Puget Sound). State and local agencies should make use of these materials and implement mailing and information dissemination programs. Brochures mailed to homeowners as part of general utility correspondence or as special mailings are also effective. Posters and other materials distributed at libraries can help disseminate this information to the public. Educational and outreach programs should target builders, buyers, system installation contractors, inspectors, and enforcement personnel, in addition to homeowners, realtors, and pumpers.

f. Discharges Into Storm Drains

Significant loadings of NPS pollutants enter surface waters and tributaries via illegal discharges into storm drains. The public unknowingly assumes that storm drains discharge into sanitary sewers, and materials are dumped into storm drains under the assumption that treatment will occur at the sewage treatment plant. Illicit discharges may also be a problem. Public education programs, such as storm drain stenciling, and identification of illicit discharges can be effective tools to reduce pollutant loadings. Sanitary surveys are also a useful method to help managers identify the presence and entry point(s) of illicit discharges or other sources of pollutants to storm sewer systems.

g. Litter

Litter along coastal waterways, estuaries, and inland shorelines has become a significant source of nonpoint source pollution. Litter, debris, and dumped large solid items impair coastal water quality, as well as the aesthetic and recreational value of coastal waters, and may also be a hazard to wildlife. Storm sewers have been identified as a significant source of marine debris (Younger and Hodge, 1992).

Plastics are the major debris problem in the marine environment. Plastic accounts for 59 percent of the debris collected in coastal cleanup efforts (Younger and Hodge, 1992). Other litter may also be a problem. The State Adopt-a-Highway programs have revealed that beverage cans are the item most frequently removed from the side of roads. These wastes commonly have entered surface waters via storm sewers or swale systems. During 1991-1992, participants in the Virginia Adopt-a-Highway program removed 36,000 cubic yards of debris with volunteer hours valued at $2 million (M. Kornwolf, Virginia Dept. of Transportation, personal communication, 1992).

h. Commercial Activities

Nonpoint source runoff from commercial land areas such as shopping centers, business districts, and office parks, and large parking lots or garages may contain high hydrocarbon loadings and metal concentrations that are twice those found in the average urban area (Woodward-Clyde, 1991). These loadings can be attributed to heavy traffic volumes and large areas of impervious surface on which these pollutants concentrate (Long Island Sound Regional Planning Board, 1982). For example, contributions of lead to the Milwaukee River south watershed have been estimated as 20 to 25 percent from commercial areas and 40 to 55 percent from industrial areas (Wisconsin Department of Natural Resources, 1991). Where activities other than traffic, such as liquids storage and equipment use and maintenance, are associated with specific commercial activities, other pollutants may also be present in runoff. BMPs suited to the control of automotive-related pollutants and any other pollutants associated with specific commercial uses should be used to control their entry into surface waters.

Gas stations, in most communities, are designated as a commercial land use and are subject to the same controls as shopping centers and office parks. However, gas stations may generate high concentrations of heavy metals, hydrocarbons, and other automobile-related pollutants that can enter runoff (Santa Clara Valley Water Control District, 1992). Since gas stations have high potential loadings and pollutant profiles similar to those of industrial sites, the good housekeeping controls used on industrial sites are usually necessary.

i. Pet Droppings

Pet droppings have been found to be important contributors of NPS pollution in estuaries and bays where there are high populations of dogs. Fecal coliform and fecal streptococcal bacteria levels in runoff in several drainage basins in Long Island, New York, can be attributed to the dog population (Long Island Regional Planning Board, 1982). Although dogs cause the more common pet droppings problem, other urban animals, such as domestic or semi-wild ducks, also contribute to NPS pollution where their populations are high enough. Eliminating or significantly reducing the quantity of pet droppings washed into storm drains and hence into surface waters can improve the quality of urban runoff. It has been estimated that for a small bay watershed (up to 20 square miles), 2 to 3 days of droppings from a population of 100 dogs contribute enough bacteria, nitrogen, and phosphorus to temporarily close a bay to swimming and shellfishing (George Heufelder, personal communication, 1992).

The Soil Conservation Service in the Nassau-Suffolk region of New York collected data indicating that domestic animals contribute BOD, COD, bacteria, nitrogen, and phosphorus to ground water and surface waters (Nassau-Suffolk Regional Planning Board, 1978). Runoff containing pet droppings has been found to be responsible for numerous shellfish bed closures in Massachusetts (George Heufelder, personal communication, 1992; Nassau-Suffolk Regional Planning Board, 1978). In New York the large populations of semi-wild White Pekin ducks contribute heavily to runoff problems, while in a Massachusetts study, dog feces alone were found to be sufficient to account for the closures.

3. Management Measure Selection

This management measure was selected to ensure that communities implement solutions that may result in behavioral changes to reduce nonpoint source pollutant loading from the sources listed in the management measure. A number of States and local communities, including Washington, Maryland, Virginia, Florida, and Alameda County, California, are using pollution prevention activities to protect or enhance coastal water quality. Such activities include public education, promotion of alternative and public transportation, proper management of maintained landscapes, pollution prevention, training and urban runoff control plans for commercial sources, and OSDS inspection and maintenance. To allow flexibility, specific controls have not been specified in the management measure. Communities may select practices that best fit local priorities and the availability of funding. In addition, flexibility is necessary to account for community acceptance, which is often the major determinant affecting whether education and outreach activities and administrative mechanisms such as certification and training requirements are practical or effective solutions.

CASE STUDY - ARLINGTON COUNTY, VIRGINIA

Arlington County, Virginia, is drafting a source control plan for "minimizing impacts on its streams, a well as impacts to the Potomac River and the Chesapeake Bay, from pollutants entering the streams from many diverse sources." The plan is aimed at implementing individual programs for controlling sources of nonpoint pollution. Projects include:

- Storm drainage master plan;
- Educational programs for lawn management;
- Evaluation of street sweeping programs;
- Stream valley stabilization and restoration;
- Evaluation of parking lot and street design requirements;
- Land use planning;
- Leaf and debris collection;
- Household hazardous waste disposal; and
- Storm drain stenciling.

4. Practices, Effectiveness Information, and Cost Information

As discussed more fully at the beginning of this chapter and in Chapter 1, the following practices are described for illustrative purposes only. State programs need not require implementation of these practices. However, as a practical matter, EPA anticipates that the management measure set forth above generally will be implemented by applying one or more management practices appropriate to the source, location, and climate. The practices set forth below have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the management measure described above.

- ***a. Promote public education programs regarding proper use and disposal of household hazardous materials and chemicals.***

Public education is an important component of this management measure. The provision of information regarding the environmental impacts of common household activities can produce long-term shifts in behavior and may result in significant reductions in household-generated pollutants. School curricula on watershed protection, including nonpoint pollution control, have been developed for elementary and secondary school education programs. An example is the program developed by the Washington State Office of Environmental Education (Puget Sound Water Quality Authority, 1989). Incorporating such programs into regular school curricula is an effective way to educate youth about the importance of environmentally conscious behavior, which in turn can help reduce the need for and cost of technology-based pollution control.

Florida developed a comprehensive Statewide plan for environmental education coordinated by its Council on Comprehensive Environmental Education to be implemented through formal and informal education programs and State agency programs. All teachers receive the training, as well as State agency personnel and school children in grades kindergarten through 12 (Florida Council on Comprehensive Environmental Education, 1987).

Public participation is an effective means of educating the public and is also necessary for successfully creating and implementing a nonpoint pollution control plan. Public involvement should be encouraged during the planning process through attendance at meetings, workshops, and private or group consultations, and by encouraging the public to comment on planning documents. Support for the documents and the plans being developed is fostered through public involvement. Newsletters are an effective means of keeping the public informed of what planning steps are being taken and how the public can become and stay involved. Metropolitan Seattle has printed an educational brochure concerning waste oil disposal in six languages in order to reach a wider audience (Washington State Department of Ecology, 1992).

- ***b. Establish programs such as Amnesty Days to encourage proper disposal of household hazardous chemicals.***

Recognizing the potential impacts for environmental degradation from the improper disposal of hazardous household materials and chemicals, many communities have implemented programs to collect these chemicals. There has been an exponential growth in the number of such collection programs since the early 1980s. Two programs were in place in 1980; 822 were in place in 1990. The most common type of collection system is a 1-day event at a temporary site (often referred to as an Amnesty Day). More local governments are beginning to sponsor these programs several times a year, and many communities are establishing permanent programs, including retail store drop-off programs, curbside collection, and mobile permanent facilities (Duxbury, 1990). Table 4-29 *(20k)* summarizes the cost and effectiveness of some household chemical collection programs.

In spite of relatively low participation rates, collection programs can have a significant impact on the amount of hazardous chemicals and materials entering the waste stream. It has been estimated that the amount of hazardous chemicals collected in States having approved coastal management programs was approximately 51,000 drums, or 280,500 gallons, in 1990 (extrapolated from Duxbury, 1990).

- ***c. Develop used oil, used antifreeze, and hazardous chemical recycling programs and site collection centers in convenient locations.***

Household hazardous chemical (HHC) collection programs already exist in many counties throughout the United States. Specific days are usually designated as drop-off days and are advertised through television, newspapers, flyers, and radio. In Arlington County, Virginia, collection during the week is by appointment with a water pollution chemist employed by the county and on one Saturday a month. Other HHC collection programs have once-a-week or once-a-month collection days, and some programs have a single day set aside each year for all HHC collection for the county or region. The waste collected by these programs is usually disposed of by a licensed HHC contractor. Table 4-29 *(20k)* presents program descriptions, effectiveness, and cost information for representative HHC collection programs. Many service stations currently provide used oil and antifreeze recycling facilities for "do-it-yourselfers" to encourage environmentally sound disposal.

- ***d. Encourage proper lawn management and landscaping.***

The care of landscaped areas can contribute significantly to NPS pollutant loadings. Results of a telephone survey conducted in 1982 by the Virginia Polytechnic Institute and State University showed that only 12 to 15 percent of home lawns in Virginia were being managed properly. The majority of homeowners preferred to do their own lawn work; only 8 to 10 percent of the households used commercial lawn care companies. A similar survey conducted on Long Island concluded that in affluent neighborhoods, 72 percent of the respondents used a lawn care service; in the least affluent neighborhoods, no one subscribed to commercial lawn care (Cornell Water Resources Institute, 1985). The extent of nonpoint source pollution from fertilizer application is site-specific and depends on a number of factors, including soil type, application rate, type of fertilizer, precipitation and watering amount, and socioeconomic status of residents. Because most people are not trained in proper fertilization and maintenance application, homeowner lawn care may result in significant amounts of nonpoint source pollution.

To significantly decrease homeowners' pesticide and fertilizer loadings requires a broad-based educational effort. The State Cooperative Extension Service (CES) is one educational vehicle; however, the CES reaches only a small percentage of the population. Mass media approaches are generally the most effective way to reach a large part of the population, though some other possibilities are discussed below (Puget Sound Water Quality Authority, 1991). The following practices are part of proper lawn management and landscaping.

- *Proper pesticide and herbicide use, and reduced applications*

While few studies have been conducted to correlate pesticide and herbicide use with adverse effects on marine water quality, the magnitude of potential impacts can be inferred from incidents such as the extensive ground-water contamination in counties bordering the Puget Sound following widespread use of the pesticide ethylene dibromide (EDB) (Puget Sound Water Quality Authority, 1989). Estimates of pesticide use in the Puget Sound area reveal that 20 percent of the volume of pesticides applied is from residential sources and that these applications are typically in excess of recommended amounts or are too concentrated (Puget Sound Water Quality Authority, 1991).

Maintaining a buffer between surface water and areas treated with pesticides is one method to increase the transport distance and reduce the potential for offsite movement of toxics. Selection of less toxic, mobile, and persistent chemicals with greater selective control of pests is encouraged (Spectrum Research, 1990).

- *Reduced fertilizer applications and proper application timing*

Lawn fertilization has been identified as a source of excess nitrogen and phosphorus loadings that may lead to eutrophication. A modeling study of urban runoff pollution conducted in Pennsylvania, Maryland, Washington, DC, and Virginia by Cohn-Lee and Cameron (1991) estimated that the nonpoint source loadings of nutrients were equal to or greater than loadings discharged from POTWs and industries in the Chesapeake Bay area.

Ground-water contamination also may be of concern especially where interflow exists between surface waters and ground waters. Schultz (1989) found that over 50 percent of the nitrogen in fertilizer leaches from a lawn when improperly applied. NVSWCD et al. (1991) found that up to two-thirds less fertilizer can be applied than is typically recommended by manufacturers. The use of slow-release forms of nitrogen and proper watering may also decrease nonpoint source pollution loadings (Nassau-Suffolk Regional Planning Board, 1978).

- *Limited lawn watering*

Nonpoint source runoff from lawns can be reduced by employing efficient watering techniques. Overwatering can increase nitrogen loss 5 to 11 times the amount lost when proper watering strategies are used (Morton et al., 1988).

Soaker hoses and trickle or drip irrigation systems are an alternative to sprinkler systems. These types of systems deliver water at lower rates, which can increase the volume infiltrated, conserve water, and avoid runoff that can be associated with improperly operated sprinkler systems.

- *Use of minimum maintenance/minimum disturbance and IPM methods*

Minimum maintenance/minimum disturbance policies and strategies can effectively reduce land disturbance and associated soil loss and can reduce fertilizer, pesticide, and herbicide loadings. Where new development is occurring, community standards that limit the use of fertilizers or require commercial lawn care companies to use low-impact lawn care practices can decrease NPS loadings. Such practices can be promoted through public education programs for both new and existing developments.

Effective use of IPM strategies can further reduce nonpoint source loadings. Regional soil conservation services, agricultural extension offices, local conservation districts, or the U.S. Department of Agriculture are good sources of information on IPM. A study in Maryland on IPM for street and landscape trees in a planned suburban community demonstrated that pesticide use could be reduced by 79 to 87 percent when spot application techniques were substituted for cover spray techniques. An average annual cost savings of 22 percent also resulted from the program.

Effective IPM Strategies include (Washington State Department of Ecology, 1992):

- Use of natural predators and pathogens;
- Mechanical control;
- Use of native and resistant plantings;
- Maintainenance of proper growing conditions;
- Removal of or substitutions for less-favored pest habitat;
- Timing annual crops to avoid pests;
- Localized use of appropriate chemicals as a last alternative.

- *Xeriscaping*

Xeriscaping, creative landscaping for decreased water, energy, and pesticide/fertilizer inputs, can be used to reduce urban runoff and minimize the application of lawn care products that may adversely impact coastal waters. The use of xeriscaping practices can reduce required lawn maintenance up to 50 percent and reduce watering requirements by 60 percent (Clemson University, 1991). Florida has passed legislation requiring xeriscaping on the grounds of all State buildings. Several other States, including New Jersey and California, actively support xeriscaping efforts. A more detailed discussion of xeriscaping is in Section II.C of this chapter.

- *Reduced runoff potential*

Rainwater from roofs can be infiltrated into the ground in gravel-filled trenches in well-drained soils or collected in rain barrels for later irrigation. Wood decking or brick pavers allow greater infiltration than do solid concrete structures. Landscape terracing reduces runoff and erosion when gardening on slopes (Washington State Department of Ecology, 1992).

- *Training, certification, and licensing programs for landscaping and lawn care professionals*

  Training, certification, and licensing programs are an effective method to educate lawn care professionals about potential nonpoint pollution problems associated with fertilizer, pesticide, and herbicide applications. The State Cooperative Extension Service commonly provides these services. Trained lawn care professional can also help educate the general public about the advantages of low-input approaches.

- ***e. Encourage proper onsite recycling of yard trimmings.***

Home composting promotes onsite recycling of plant nutrients contained in yard trimmings and reduces the potential for nutrients to enter surface waters. Unlike most commercial fertilizers, compost releases nutrients slowly and is a source of trace metals (Hansen and Mancl, 1988). When added as an amendment to lawn or garden soils, compost increases the organic content of the soil, which increases infiltration, reduces runoff, and decreases the need for watering. Sediment and bound nutrients in soils with high organic content are less mobile and less likely to migrate from the site. Compost applications may also result in increased plant health and vigor, allowing for the reduced use of pesticides (Logsdon, 1990).

Home composting programs may result in municipal cost savings. An average suburban yard generates up to 1,500 pounds of yard trimmings per year, most of which is usually landfilled (McNelly, undated). Homeowners should be encouraged to place compost piles or bins away from streams and roadways that may serve as conveyances of leached nutrients. Recycling of grass clippings and mulched leaves should also be encouraged through education programs. The retention of grass clippings and mulched leaves reduces the need for supplemental water and fertilizer inputs.

Suggested backyard composting programs include the following:

- Provide compost bins free or at cost.
- Create pamphlets explaining benefits and methods.
- Start a "Master Composter" program in which graduates receive free equipment and conduct their own workshops.
- Provide credits on waste removal fees to people who compost yard wastes.

- ***f. Encourage the use of biodegradable cleaners and other alternatives to hazardous chemicals.***

Improperly disposed household cleaners containing nonbiodegradable chemicals have the potential to contaminate surface waters and ground water. OSDS systems may also be adversely impacted by these substances (PSWQA, 1989). The use of nontoxic, biodegradable alternatives, which quickly break down, should be encouraged through public education efforts (Reef Relief, 1992).

- *g. Manage pet excrement to minimize runoff into surface waters.*

The Soil Conservation Service in the Nassau-Suffolk region of New York collected data indicating that domestic animals contribute BOD, COD, bacteria, nitrogen, and phosphorus to ground water and surface waters (Nassau-Suffolk Regional Planning Board, 1978). Urban runoff containing pet excrement has been found to be responsible for numerous shellfish bed closures in New York and has been implicated in shellfish bed closures in Massachusetts (George Huefelder, personal communication, 1992; Nassau-Suffolk Regional Planning Board, 1978). In New York, the large populations of semi-wild Pekin ducks contribute heavily to water quality problems. A study in Massachusetts found that dog droppings alone were significant enough to cause shellfish bed closures.

Curb laws, requiring that dogs be walked close to street curbs so they will defecate on the streets near curbs, are intended to ensure that street sweeping operations collect the droppings and prevent them from entering runoff. However, traditional street sweeping has been found to be an ineffective means for controlling fines and soluble NPS pollution and the dog droppings are more often swept into sewers and delivered to bays and estuaries during rain storms (Long Island Regional Planning Board, 1982; 1984; Nassau-Suffolk Regional Planning Board, 1978). Curbing ordinances should therefore be repealed where they are in effect, and laws requiring pet owners to clean up after their pets when they are walked in public areas and to dispose of the droppings properly should be enacted.

Proper cleanup and disposal of canine fecal material and discouragement of public feeding of waterfowl are two ways of potentially controlling the adverse impacts of animal droppings. The following examples from the Long Island Regional Planning Board (1984) illustrate controls for NPS pollution from animal droppings.

Control of NPS pollution from dogs:

- Enactment of "pooper-scooper" laws requiring the removal and proper disposal of dog feces on public property.
- Enforcement of existing "pooper-scooper" and leash laws should be improved in priority target areas where animal feces are known to be an NPS pollution problem.

Control of NPS pollution from horses:

- Instituting zoning ordinances to control the keeping of horses. These ordinances should include:
  - Minimum acreage requirements per horse;
  - Specifying areas where horse waste may be stored; and
  - Designated areas where horses may be kept.

- Limiting the density of horses in deep aquifer recharge areas, in selected shallow aquifer recharge areas, in areas immediately adjacent to surface waters, and where slopes are greater than 5 percent.

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Surface Water Quality

What's the problem with pet waste?

It's a health risk to pets and people, especially children. It's a nuisance in our neighborhoods. Pet waste is full of bacteria that can make people sick. If it's washed into the storm drain and ends up in a lake, stream or marine water, the bacteria ends up in shellfish. People who eat those shellfish can get very sick. The waste produced by Seattle's dogs and cats is about what a city the size of Renton or Kennewick--about 50,000 people--would produce. Unless people take care of it, the waste enters our water with no treatment.

This information is brought to you by the Water Quality Consortium, a group of public agencies working together to reduce nonpoint water pollution through education.

Partially funded by a Centennial Clean Water Fund grant from Washington State Department of Ecology.

Clean Water tip:

How can you get rid of pet waste and help keep our waters clean?

Here are some options.

Scoop it up and flush it down the toilet. That's best because then your community sewage treatment plant or your septic system treats the pet waste.

Seal the waste in a plastic bag and throw it in the garbage. (This is legal in most areas, but check local laws.)

Bury small quantities in your yard where it can decompose slowly. Dig a hole one foot deep. Put three to four inches of waste at the bottom of the hole. Cover the waste with at least eight inches of soil. Bury the waste in several different locations in your yard and keep it away from vegetable gardens.

Use commercially available compost or make your own using garden waste. Mixing compost with your soil means your plants will need less chemical fertilizer and puts your waste to good use. Commercial compost and soil amendments may be available from your solid waste or wastewater utility as well as your local garden store.

To find out more about the

	problems of pet waste and what you can do to prevent water pollution, call the number of your local community listed below.

SPU Home Contact Us Site Index

Last Updated: 11/18/98

King County
Water & Land Resources Division
(206) 296-6519
http://waterquality.metrokc.gov/

City of Seattle
Public Utilities
(206) 684-7560
http://www.ci.seattle.wa.us/seattle/util

City of Bellevue
Utilities Department
(206) 451-4480
http://www.ci.bellevue.wa.us/bellevue/

City of Tacoma
Public Works Department
(206) 591-5588
http://www.ci.tacoma.wa.us/

Washington State
Department of Ecology
(360) 407-6400
http://www.wa.gov/ecology/

Maintaining Drainage Structures

Maintaining Your Drainage Structures keeps them working so they don't back up and flood your property or send accumulated pollutants downstream to local creeks, lakes, and Puget Sound. The City maintains public drainage structures, but you're responsible for the ones on your property. If you don't know what ones you have, call the Seattle Street Use Counter at (206) 684-5283. Hold on to inspection and maintanence records at least ten years, as required by City code and to help you plan future maintenance.

Keep sediment and other pollutants out of your stormwater runoff. Pollution prevention reduces drainage system maintenance costs. It also keeps pollutants out of our surface waters, since many pollutants aren't trapped in your drainage structures. For more information, contact a SPU Surface Water Quality specialist.

Be sure to follow safety precautions:

☐ **The lid may be heavy.**

☐ **Harmful gases can collect in the basin.**

☐ **Confined space safety requirements may apply. For information, call the Department of Labor and Industries, 281-5470, and ask to speak with a safety consultant.**

☐ **Don't leave an open catch basin unattended; someone could trip or fall in.**

☐ **Never enter a catch basin or other drainage strucutre unless you are properly trained.**

STORM GRATES

Grates allow stormwater runoff to enter the underground drainage system. Grates are located over a catch basin (see figure below) or an inlet structure, which leads directly to a storm drainage pipe without an area for collecting sediment.

☐ Remove leaves and trash, so the grate doesn't clog.

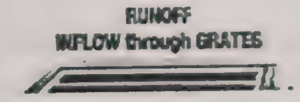
☐ Keep pollutants out. If you notice oil sheens, stains, or dirt around the grate, find out where those pollutants are coming from and fix the problem.

☐ Stencil the message "Dump No Waste, Drains to Lake" next to your grates, Call SPU's Stenciling Program to borrow the materials you need.

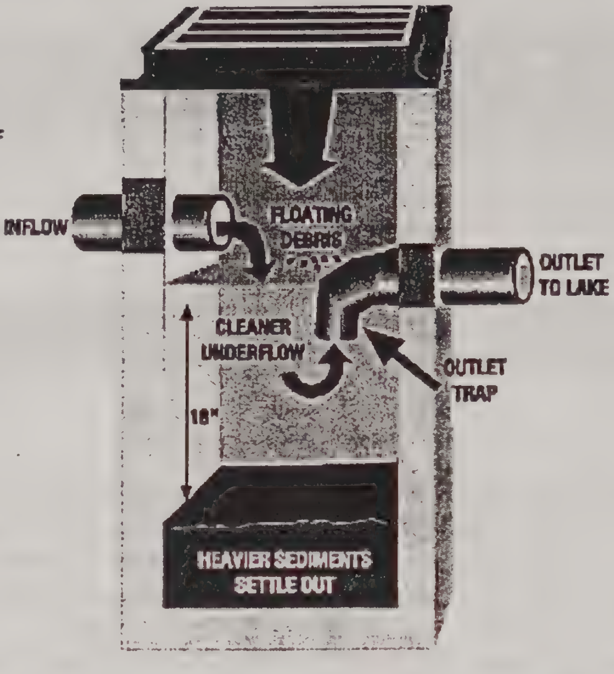
CATCH BASINS

Catch basins are underground boxes which receive stormwater through a grate at the ground surface and/or an inlet pipe. Water discharges through an outlet pipe, which is usually at least three feet above the catch basin bottom. If the water isn't too turbulent, heavy pollutants settle to the bottom and collect there.

☐ Check the catch basin. Insert a yard stick or other probe to see if



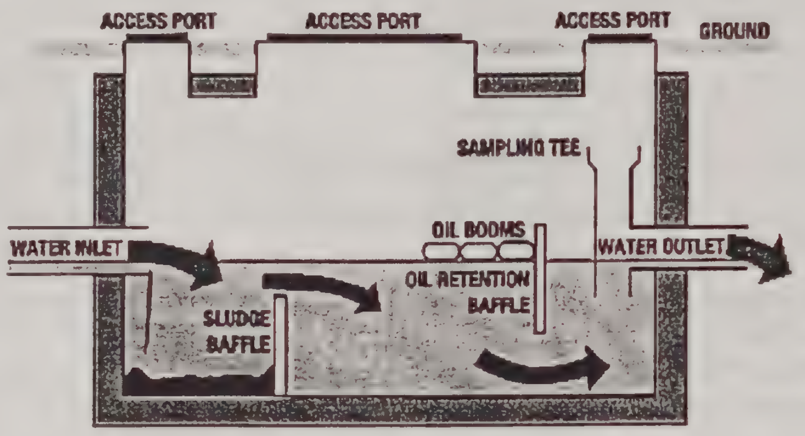
the catch basin needs to be cleaned. As a general rule, clean it when there's less than 18 inches between the outlet pipe (where the water level usually is) and the top of the accumulated sediment. Some catch basins fill up in three months. Others take years.



☐Clean the catch basin. You can hire a contractor. Or you can clean it yourself by lifting the lid and using a bucket (to remove any water) and a shovel.

☐Properly dispose of the removed solids. Let them dry out. If only stormwater runoff entered your catch basin, and the solids appear free of chemical odors, sheens, or other signs of contamination, you can put them in your dumpster. If you suspect the material might be hazardous, call the Waste Characterization Progam, 296-4633. Make sure the removed sediment doesn't wash back into your catch basin, and don't dispose of it on your or someone else's property.

OIL/WATER SEPARATORS

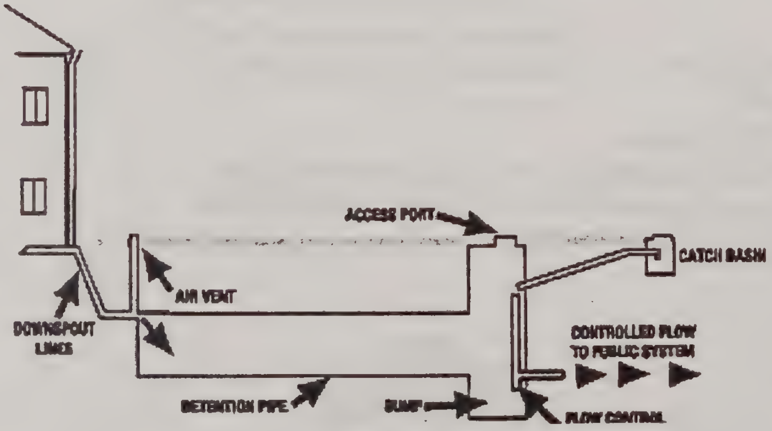


Oil/water separators trap oil. Sometimes catch basins that include an outlet trap are called spill control oil/water separators; see the catch basin information. There are two other common types of oil/water separators American Petroleum Institute (API) separators and coalescing plate (CP) separators. Businesses such as fueling facilities and vehicle repair shops with potentially oily runoff may have an API or CP oil/water separator.

☐Check the system at least every October. Insert a stick to estimate the oil depth. Have the system cleaned when oil is three or more inches deep upstream of the oil retention baffle.

☐Replace oil absorbent pads if your separator has them. Wring out used pads over a container, recycle the collected oil, and then dispose of the pad in your dumpster.

DETENTION FACILITIES



The City began requiring detention facilities in the mid-1970s to mitigate the effects of increased stormwater runoff associated with development. Detention facilities reduce the rate at

which runoff enters the public drainage system, thereby reducing back-ups and flooding. They also trap some pollutants. Detention facilities include a storage area (typically a large pipe or vault), a flow control tee that regulates how fast water leaves the system, and a concrete access structure with a metal lid at the ground surface marked "drain." On sites with lots of pavement and building area, detention facilities can be very large, for example 200 feet long by 25 feet deep by 12 feet wide.

☐Call SPU Community Service Division (206) 684-7666 or visit the Drainage Inspection Program website to set up a free inspection by the City. If the system needs to be cleaned or repaired, the City will re-inspect it afterwards to make sure the work was done properly.

☐Clean the detention facility as needed. It's best to hire a qualified contractor to do so.

HIRING A CONTRACTOR **To find a contractor to clean your drainage structures:**

☐Look in the yellow pages under "Tanks - cleaning," "Drainage contractors," and "Vacuum cleaning - industrial," and ask the listed firms if they maintain drainage systems.

☐View the Drainage Inspection Program website for a list of drainage maintenance firms. SPU makes no recomendations about the firms.

☐Look under "Tank cleaning" in the vendor directory of the Hazardous Waste Management Guide for Small Businesses (that listing isn't just for hazardous waste tanks); call the Business Waste Line, (206) 296-3976, to get the most recent edition.

It's a good idea to get at least three bids and check references. Expect to pay roughly $150 or more for cleaning one, two, or three catch basins and up to thousands of dollars for cleaning a large detention facility. If you have a detention facility and the City inspected it, give contractors a copy of the inspection report to help them prepare an accurate bid. When getting bids ask how the material will be disposed of.

Make sure the contractor properly disposes of the removed fluids and solids. If they appear contaminated, call the Waste Chracterization Program, (206) 296-4633, to see if they need to be tested. If they aren't hazardous, they still need to be properly disposed.

TIPS

☐Sweep your lot regularly to reduce the need for catch basin cleaning.

☐Consider installing and maintaining catch basin inserts or an oil-absorbent pillow (which needs to be well-secured so it doen't wash into the outlet pipe).

☐Install an outlet trap if there isn't one already. They're inexpensive and make it much easier and cheaper to clean up any floarable pollutants that spill into your catch basin.

☐Repair or replace damaged outlet traps. Make sure the outlet trap is reattached after cleaning.

☐Never dump waste oil, solvents, or other wastes into an oil/water separator.

☐Keep soap out of your separator and the catch basins that lead to it. Soaps prevent the separator from doing its job.

☐Consider installing and maintaining oil absorbent pads, to avoid or reduce the need to clean the entire oil/water sparator.

☐Regularly clean the catch basins leading to your detention facility. That reduces the need for expensive detentention facility maintenance.

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Last Updated: 11/18/98

From Chapter 5, EPA.GOV/OST/Stormwater

5.2.2 Non-Structural BMPs

Non-structural BMPs include institutional and pollution-prevention type practices designed to prevent pollutants from entering storm water runoff or reduce the volume of storm water requiring management. Non-structural BMPs can be very effective in controlling pollution generation at the source, which in turn can reduce or eliminate the need for costly end-of-pipe treatment by structural BMPs. Non-structural BMPs discussed in this report include education and source controls, recycling and maintenance practices.

5.2.2.1 Education, Recycling and Source Controls

Public education can be an effective means of reducing the amounts of non-point source pollutants entering receiving streams. The public is often unaware that the combined effects of their actions can cause significant non-point source pollution problems. Proper education on day-to-day activities such as recycling of used automotive fluids, household chemical and fertilizer use, animal waste control and other activities can significantly reduce non-point source pollutant loadings to urban streams. The main components of a public education program include:

Automotive Product Disposal

Discharge of automotive fluids such as motor oil and antifreeze to the land or storm drains can cause significant water quality problems. "Do-it-yourself" automobile mechanics often incorrectly assume that materials that are dumped into storm drains will receive treatment at a wastewater treatment plant prior to discharge. Education on appropriate recycling and disposal techniques for these materials can help to reduce pollutant loadings to streams. Education programs should identify the location of community automotive products recycling centers. In addition to impacts associated with dumping used oil and antifreeze, potential runoff pollutant sources from home automobile maintenance activities include dirt, cleaners, oils and solvents from car washing, leaking fluids such as brake and transmission fluid and gasoline spills. To reduce impacts from these activities, the following practices should be used:

- all spills or leaks should be cleaned up using a dry absorbent such as cat litter or commercially available absorbents and disposed of appropriately;
- car washing should be done away from storm drains using biodegradable cleaners, or at a commercial carwash;
- all used fluids should be recycled or disposed of appropriately;
- all fluid leaks should be repaired as soon as possible to reduce loss to the environment.

Commercial and Retail Space Good Housekeeping

Commercial and retail areas can contribute significant pollutant loadings to runoff. The biggest contributor of pollutant is usually impervious surfaces used for vehicle parking, storage and maintenance areas, which can contribute sediment, metals and hydrocarbons. Other sources include raw material and finished product storage areas, pesticides and fertilizers from grounds maintenance, and rooftop runoff. Good housekeeping practices include using porous pavement or modular paving systems for vehicle parking lots; limiting exposure of materials and equipment to rainfall; spill cleanup, using dry cleanup techniques instead of wet techniques; and limiting direct runoff of rooftops to storm drains.

General Community Outreach

A main problem associated with identifying and controlling nonpoint source pollution is that the public is generally unaware of the sources and control measures for urban nonpoint source pollutants. Information dissemination is a critical need of most local storm water programs. Information that explains the sources of nonpoint source pollution, control measures available and the steps homeowners and commercial owners can do to reduce impacts of their activities can help to increase the public awareness of the need to control nonpoint source pollution. A few of the techniques available for providing educational materials to the public include television, radio and newspaper announcements, distribution of flyers, community newsletters, workshops and seminars, conducting teacher training programs at schools, and supporting citizen-based watershed stewardship groups and volunteer monitoring programs.

Industrial Good Housekeeping

Industrial areas can contribute significant loadings of toxic pollutants to storm water runoff. Therefore, educational programs that inform industrial site owners and operators about pollution prevention and source control programs to reduce nonpoint source pollutant can significantly reduce the amounts of pollutants discharged from industrial areas. Pollution prevention practices include minimizing or eliminating exposure of materials and products to rainfall by storing inside or under cover, spill cleanup, minimizing pesticide/herbicide and fertilizer use, and minimizing discharges of equipment wash water to storm drains.

Storm Drain Inlet Stenciling

Since storm drains frequently discharge runoff directly to water bodies without receiving any type of treatment, storm drain stenciling programs that educate residents not to dump materials into storm drains or onto sidewalks, streets, parking lots and gutters can be effective at reducing nonpoint source pollution associated with illegal dumping. Residents are frequently unaware that materials dumped down storm drains may be discharged to a local water body. Therefore, stenciling the inlets can be a simple yet effective means of alerting residents of this fact. The Northern Virginia *Nonstructural Urban BMP Handbook* (NVPDC, 1996b) contains a useful discussion on developing a storm drain stenciling program.

Pesticide/Herbicide Use

Due to their high aquatic toxicity, pesticides and herbicides can be a significant source of water quality impairment in urban streams. Pesticide usage in the United States was estimated at more than 1.2 billion pounds of active ingredients in 1995 (US EPA, 1997b). Of this total, agricultural usage constituted 939 million pounds (77 percent), commercial, industrial and government usage accounted for 150 million pounds (13 percent) and home and garden usage accounted for 133 million pounds (11 percent). A significant portion of these applications find their way into storm water runoff and ultimately into receiving streams through spray drift, transport by soils, solubilization by runoff, and by spillage, dumping and improper disposal of containers and residuals. Education on the proper methods of application, application rates and alternatives to pesticides can help to reduce the amount of pesticides that are carried by urban runoff. Alternatives to pesticides, such as in integrated pest management program and pesticide alternatives such as insecticidal soap or natural bacteria, can also reduce the need for pesticides.

Fertilizer Use

A significant amount of nutrients in urban runoff results from misapplication of fertilizer to the urban landscape. Residential lawn and garden maintenance and maintenance of landscape and turfgrass at golf courses, schools and commercial areas uses significant amounts of fertilizers containing nitrogen and phosphorus. Since most fertilizers are water soluble, over-application or application before rainfall events can allow significant quantities to be carried away by storm water runoff. Education on proper application of fertilizers can help to reduce the quantities of nutrients reaching receiving waters.

Household Hazardous Material Disposal

A variety of hazardous and potentially harmful chemicals and materials are improperly used and disposed of by residential homeowners. Materials such as paints and thinners, cleaning products, wood preservatives, driveway sealants and a variety of other miscellaneous household chemicals can find their way into storm water if improperly used, stored or disposed of. Education on usage and holding an annual or semi-annual community household hazardous waste collection program can help to reduce the amounts of these materials that enter storm water runoff.

Lawn Debris Management

Lawn debris such as grass trimmings and leaves require proper management in order to reduce impacts to urban streams. Grass trimmings and leaves can be carried away by runoff and can find their way into streams where they rapidly decompose and release nutrients. Grass trimmings and leaf litter can be controlled by composting or by community curbside collection programs. Composted yard debris can be an excellent source of mulch for residential landscape and gardens. Use of mulch can greatly reduce the need for inorganic fertilizers, which helps to keep nutrient loadings to streams to a minimum.

Pet Waste Disposal

Pet waste can cause significant loadings of bacteria, nutrients and oxygen demanding substances to urban runoff. Pet waste deposited on yards, sidewalks and streets can be carried by runoff into storm drains. As an example, it is estimated that 11,445 pounds of dog waste are generated in the Four Mile Run watershed in northern Virginia each day.[2] 378 pounds of BOD, 39 pounds of total phosphorus and 189 pounds of total nitrogen are washed off into Four Mile Run and its tributaries annually as a result of this pollution load (NVPDC, 1996b). In many areas, regulations exist prohibiting the deposit of pet waste on public property. However, it is often very difficult to enforce these laws. Community education on the impacts associated with pet waste and alternative disposal methods such as flushing and disposal in the trash can help to reduce impacts associated with pest waste. A particularly useful method of controlling pet waste is for communities to provide pet waste receptacles in parks and other public areas for pet owners to deposit droppings from their pets.

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[2] This estimate was calculated based on the total waste load generated by the dog population in the area, not the waste load deposited on yards, sidewalks and streets.

Illicit Discharge Detection and Elimination

Illicit discharges to storm sewers can be a significant source of pollutants in urban storm water. A study conducted in Sacramento, California indicated that slightly less than one-half of the water discharged from a municipal separate storm sewer system was not directly attributable to precipitation runoff (US EPA, 1993b). A major source of illicit discharges to storm drain systems are direct connections of sanitary sewer piping to the storm drain system. In addition to direct connections, seepage and sewage from leaking sanitary sewer lines can find their way into storm drains, especially in areas where storm drains run parallel to the sanitary sewer lines. Spills can also be collected by storm drain inlets.

Detection and elimination of illicit connections and discharges can significantly reduce the concentrations of bacteria, nutrients and oxygen demanding substances contained in storm water discharges. Several methods exist for detection and elimination of illicit cross-connections. Useful indicators of the presence of cross connections include dry weather flows in storm sewer lines and biological indicators that indicate the presence of human fecal matter in storm drain outfalls. Once illicit connections are detected, excavation and correction of the illicit connections are necessary. In addition to detection and elimination of existing cross-connections, plans for new development should be carefully reviewed and inspections should be conducted during construction in order to prevent future cross-connections from being placed. Storm drain stenciling programs and a public spill reporting system can help to educate the public on proper procedures for managing spills to prevent discharge to the storm sewer system.

5.2.2.2 Maintenance Practices

Maintenance programs are necessary in order to reduce the pollutant contribution from the urban landscape and to ensure that storm water collection and treatment systems are operating as designed. Major maintenance practices that can be used include:

Catch Basin Cleaning

Catch basins naturally accumulate sediment and debris such as trash and leaf litter. In order to ensure their continued effectiveness, catch basins need to be periodically cleaned. This can be done by manual means, or by using a vacuum truck.

Street and Parking Lot Sweeping

Urban streets and parking lots can accumulate large amounts of pollutants that can be washed off during storm events. Streets and parking lots comprise a significant portion of the total impervious area within a developed watershed, and a large percentage, if not the entire area, of streets and parking lots are usually directly connected to the storm drain system. In an investigation conducted by Bannerman (Bannerman et al, 1993), data on runoff volumes from streets and parking lots collected during 4 years from two urbanized areas in Wisconsin indicated that 54 percent of the total runoff volume from residential areas was due to direct runoff from streets and parking lots, and that 80 percent of the total runoff volume from commercial areas was due to direct runoff from streets and parking lots. A breakdown of the runoff volumes based on source area is shown in Table 5-1.

Table 5-1. Percent Runoff Volumes Contributed by Source Area in Two Urbanized Areas of Wisconsin

Land Use	**Source Area Percent Runoff Contribution**					
	Feeder Streets	Collector Streets	Arterial Streets	Parking Lots	Total % due to roads and parking lots	Total Other %*
Residential	34	20	--	--	54	46
Commercial	--	10	21	49	80	20

* Other land uses include lawns, driveways, rooftops and sidewalks
Source: Adapted from Bannerman et al, 1993

Furthermore, Bannerman found that runoff from streets and parking lots contributed a significant portion of the total runoff pollutant loading. Table 5-2 summarizes the pollutant load contributions based on land uses, and indicates the total contaminant contribution in the urbanized area attributable to runoff from streets and parking lots.

MEMORANDUM

DATE: May 5, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Meeting Notice and Information

NOTE THE MEETING LOCATION!

The next CAC meeting is confirmed for:

Tuesday, May 16, 2000
6:00 p.m. – 8:30 p.m.
Kerr Hall, 96 The Fenway
Northeastern University Faculty Center

Agenda Topic:Best Management Practices (BMPs)

For future meetings, we would like to reserve the Egan Center, where the March CAC meeting was held. Unfortunately, it was not available for the May 16th meeting.

Enclosures:

1. Proposed Schedule of Future Meetings
   Please review and be prepared to discuss.

2. Meeting Summary, CAC Meeting of March 30, 2000.
   Please review. Submit written comments within 7 calendar days John Burckardt by fax(617-635-3256) or e-mail (jburckardt@ci.boston.ma.us) The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.

3. "Read-ahead" Information on Best Management Practices (BMPs)
   Please review prior to the meeting. We understand that many on the CAC may be very familiar with BMPs, while others may be less familiar. We offer the enclosure so that all members have the opportunity to become familiar with this topic.

4. Letter to Congressional leaders recommending authorization and appropriation of federal funds for the Muddy River project.
   Please review draft letter and forward any comments before May 16th. CAC members who wish to sign the letter may do so at the end of the May 16th meeting.

H:\Jburckardt\CAC Meetings\CAC-5 May 16, 2000\May 2000-2nd Meeting Announcement.doc

Emerald Necklace Citizen's Advisory Committee

Faculty Club, Northeastern University
Kerr Hall – 96 The Fenway

Thursday, May 16, 2000
6:00p.m. - 8:30p.m

Agenda

I. Welcome & Comments Received **6:00 - 6:10**

Fredie Kay, MA Office of Dispute Resolution, CAC Facilitator
***John Burckardt**, Project Manager*

II. Revised Schedule of CAC Meetings **6:10 – 6:20**

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

III. Project Update **6:20 – 6:30**

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

IV. Presentation: Best Management Practices **6:30 – 7:30**

David Noonan, P.E., Vice President
Camp Dresser & McKee Inc.

Carlton L. Noyes, Sr. Environmental Scientist
Jason M. Cortell and Associates Inc.

Q&A/Discussion with CAC **7:30 – 8:05**

V. Letter Requesting Congressional Support of the Project **8:05 – 8:20**

Fran Beatty, Sr. Landscape Architect for Historic Parks
Boston Parks & Recreation Department

VI. Questions and Answers (General Public) Wrap Up **8:20 – 8:30**

Camp Dresser & McKee

Muddy River Restoration Project

Best Management Practices

May 16, 2000

David Noonan, P.E.
Carlton Noyes

Overview of Tonight's Presentation

- OVERVIEW OF BMPs
  - How we have defined them, their importance, who has responsibility, what a "model plan" looks like.
- BMPS IN THE MUDDY RIVER WATERSHED
  - Existing programs, components of each plan, how we stack up against "model" plan
- IMPROVEMENTS, ISSUES AND DELIVERABLES
  - Gap analysis, planned projects, the need for a comprehensive Management Plan.
- CAC DISCUSSION

Defining The Term: BMP

- EPA BMPs: stormwater quality and quantity

  "BMPs are the primary tools to improve the quality of urban streams..."

  EPA, Preliminary Data Summary of Urban Stormwater Best Management Practices, August 1999

- Maintenance: landscaping & historic preservation
- MUDDY RIVER BMP=EPA BMP + MAINTENANCE

The Importance of BMPs (1 of 2)

- Muddy River:
  Maximize the Life Cycle benefits of measures taken to improve:
  - flood control
  - water quality
  - historic preservation
  - landscape restoration

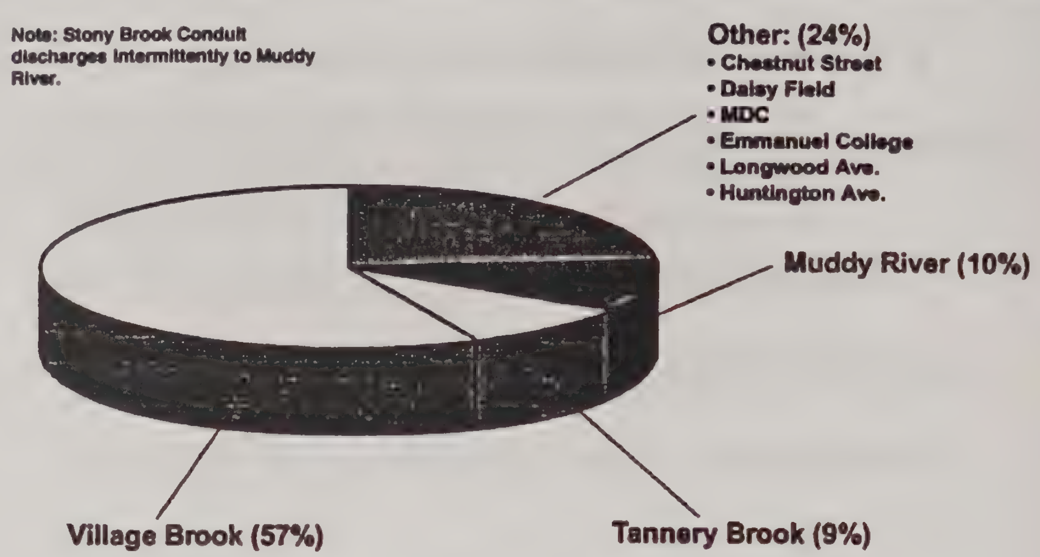
The Importance of BMPs (2 of 2)

- Minimize Re-Sedimentation Rates
  - Maximize duration of improved flood capacity
  - Determine how long before environmental and flood control improvements are needed again
- Implementation falls under multiple jurisdictions
- Maintain Improved (Post-Construction) Conditions

BMPs encompass the entire Muddy River Watershed

- See map on Board and handouts

Three Watersheds dominate the Drainage System


Note: Stony Brook Conduit discharges intermittently to Muddy River.

Total Watershed is 3,615 Acres

Responsibilities for BMPs (1 of 3)

- City of Boston
  - Parks and Recreation
  - Water and Sewer Commission
  - Public Works Dpt
  - Department of Inspectional Services
  - Health Department
  - Conservation Commission
  - Police and Animal Control
- Town of Brookline
  - Department of Public Works
  - Health Department
  - Conservation Commission
  - Police and Animal Control
- Metropolitan District Commission
- Newton

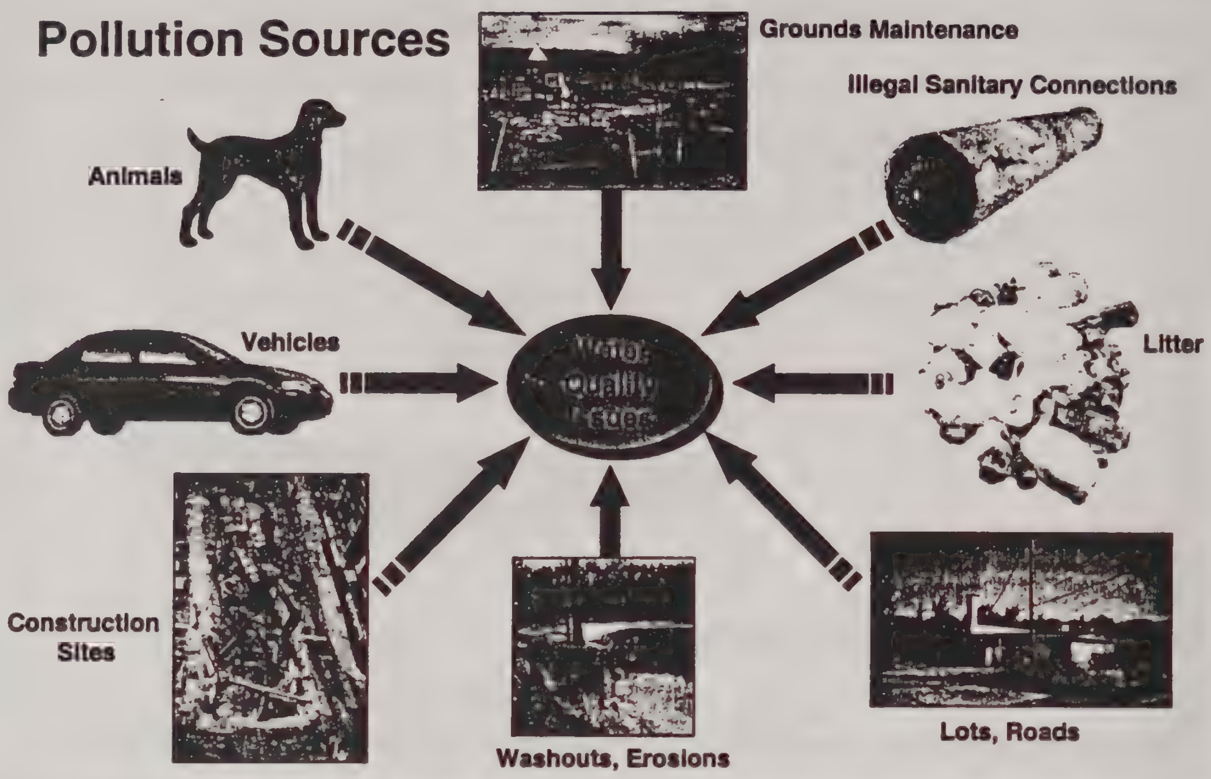
Regulatory Agencies (2 of 3)

- EPA
- MEPA
- MADEP

Citizens, Businesses, and Institutions in the Watershed (3 of 3)

- Northeastern University
- Emerald Necklace Conservancy
- Friends of Leverett Pond
- Friends of Pinebank
- Friends of the Muddy River
- Jamaica Park Advisory Committee
- Jamaica Pond Association
- Jamaica Hills Association
- Restore Olmsted's Waterways
- Arborway Coalition
- Boston Greenspace Alliance
- Fenway Alliance
- Fenway Community Development Corp.
- Fenway Civic Association, Garden Society
- Medical, Academic and Scientific Community Org.
- Businesses
- Citizens

Pollution Sources



Categories of Principal Contaminants in Stormwater

Category	Examples
Metals	zinc, cadmium, copper, chromium, arsenic, lead
Organic Chemicals	pesticides, oil, gasoline, grease
Pathogens	viruses, bacteria, protozoa
Nutrients	nitrogen, phosphorous
Biochemical Oxygen Demand (BOD)	grass clippings, fallen leaves, hydrocarbons, human, and animal waste
Sediment	sand, soil, and silt
Salts	sodium chloride, calcium chloride

Sources of Heavy Metals from Transportation

Source	Cadmium	Cobalt	Chromium	Copper	Iron	Manganese	Nickel	Lead	Zinc
Gasoline	●			●				●	●
Exhaust							●	●	
Motor Oil & Grease		●			●		●	●	●
Antifreeze					●				●
Undercoating								●	●
Brake Linings				●	●		●	●	●
Rubber	●			●				●	●
Asphalt				●			●		●
Concrete				●			●		●
Diesel Oil	●								
Engine Wear					●	●	●	●	●

Source: *Local ordinances: A Users Guide, Terrene Institute and EPA, Region 5, 1995.*

Components of a "Model" BMP Plan (per EPA, MADEP, NRDC)

- (details provided on handout)
- Infrastructure Management
- Municipal Services
- Ordinances and Regulatory Requirements
- Public Education

Percentage of Municipalities That Use BMPs (1998 national survey of coastal communities)

- Used oil collection (60%)
- Street sweeping (53%)
- Illicit connection enforcement (32%)
- Storm drain stenciling (29%)
- Erosion control ordinances (29%)
- Public education (25%)
- Stormwater discharge pipe screening (17%)
- Detention basins (33%)

Source: Natural Resources Defense Council, "Stormwater Impacts: A Survey of 119 Coastal and Great Lakes Communities," 1998.

Components of a BMP Gap Analysis (1 of 3)

Compare Existing BMP Practices with EPA/DEP Regulatory Requirements

- NPDES Discharge Permits
- Consent Agreements
- Massachusetts Rivers Protection Act Amendments to the Massachusetts Wetlands Protection Act

Compare Existing BMP Practices with EPA/DEP Protocols/Guidelines

- MA Stormwater Management Policy Guidelines
- EPA BMP Practices Manual

Components of a BMP Gap Analysis (2 of 3)

Evaluate Contaminant Sources

- Combined Sewers
- Runoff

Components of a BMP Gap Analysis (3 of 3)

Develop Corrective Measures

- Maintenance and Management Plan
- Enforcement
- Source Controls
    - combined sewers
    - inter-municipal connections
    - urban runoff (structural & non-structural)

Matrix of Specific Measures By Community

BMP	Brookline	BWSC	Boston DPW	BPRD	MDC
Catch Basin Maintenance Program	●	●	○	○	●
Catch Basin Stenciling	●	●	○	○	
Structural Water Quality Controls	●	●	○	○	
Discharge Outfall Screening & Inspection		●	○	○	○
Illegal Sanitary Sewer Connections	●	●	○	○	○
Storm Drain Maintenance	●	●	○	○	
Roadway/De-icing	●	○	●	○	●
Street Sweeping	●	○	●	○	●
Trash Barrel/Litter Control	●	○		●	●
Lawn Maintenance/Leaf Removal	●	○	●	●	●
Rodent Control	●	○	●	●	○
Roadway Patching /Repair	●	○		○	●
Goose Control	●	○	○		○
Pooper Scooper Ordinance		○			○
Water Quality Controls for New Development	●		○	○	○
Intermunicipal Connections	●	○	○	○	○
Household Hazardous Waste & Education	●	●	●	○	○
Waste Oil Collection Program	●	●	●	○	○
Stormwater Guidelines for Selected Industries and Businesses		●	○	○	○

LEGEND

● Best Management Practice in Place

○ Not Applicable

● City of Boston Inspectional Services Department

How BMP Plans Compare With Bellevue, WA

BMP	Brookline	BWSC	Boston DPW	BPRD	MDC	Bellevue, WA
Catch Basin Maintenance Program	●	●	○	○	●	●
Catch Basin Stenciling	●	●	○	○		●
Structural Water Quality Controls	●	●	○	○		●
Discharge Outfall Screening & Inspection		●	○	○	○	●
Illegal Sanitary Sewer Connections	●	●	○	○	○	●
Storm Drain Maintenance	●	●	○	○		●
Roadway/De-icing	●	○	●	○	●	●
Street Sweeping	●	○	●	○	●	●
Trash Barrel/Litter Control	●	○		●	●	●
Lawn Maintenance/Leaf Removal	●	○	●	●	●	●
Rodent Control	●	○	●	●	○	●
Roadway Patching /Repair	●	○		○	●	●
Goose Control	●	○	○		○	
Pooper Scooper Ordinance		○			○	●
Water Quality Controls for New Development	●		○	○	○	●
Intermunicipal Connections	●	○	○	○	○	●
Household Hazardous Waste & Education	●	●	●	○	○	●
Waste Oil Collection Program	●	●	●	○	○	●
Stormwater Guidelines for Selected Industries and Businesses		●	○	○	○	●

LEGEND

● Best Management Practice in Place

○ Not Applicable

● City of Boston Inspectional Services Department

DETAILS ON BMP PLANS

- See matrices and cited literature in handout

Monitoring and Maintenance Program

The long-term success of the Muddy River Flood Control, Water Quality and Habitat Enhancement Project will depend, to a large degree, on the level of post-construction monitoring and continued maintenance. Unless consistent follow-up work is conducted, the BMP measures will likely fail, invasive plants will re-infest the environment and sediment in the dredged areas will re-accumulate and threaten flooding.

The Monitoring and Maintenance Program will contain:

-The Emerald Necklace Management Structure
-Schedules, logs, checklists
-Management of invasive vegetation
-manpower requirements
-capital costs

CAC DISCUSSION

- Questions?
- What are your experiences with BMPs in the watershed?
- Concerns, considerations, and issues

COMPONENTS OF A
COMPREHENSIVE BMP PLAN (EPA, MADEP, NRDC)

Infrastructure Management
Catch basin maintenance
Catch basin stenciling
Structural Water Quality Controls
    -detention
    -biofiltration
    -infiltration
    -filtration
Discharge Outfall screening and Inspection
Illegal Sanitary Sewer Connections
Storm Drain Maintenance

Municipal Services
Roadway de-icing
Street sweeping
Trash barrel/litter control
Lawn Maintenance/Leaf removal
Rodent control
Roadway/curbing patching & repair
Pest Control (Geese)

Ordinances/Regulatory Requirements
Pooper scooper law
Water quality controls for new development
Intermunicipal connections

Public Education
Household Hazardous Waste & Education
Waste Oil Collection
Pamphlets & Newsletters

Other
Stormwater guidelines for business and industry

COMPONENTS OF A BMP GAP ANALYSIS

Compare Existing BMP Practices with EPA/DEP Regulatory Requirements

- NPDES Discharge Permits
- Consent Agreements
- MA Rivers Protection Act Amendments to the MA Wetlands Protection Act

Compare Existing BMP Practices with EPA/DEP Protocols/Guidelines

- MA Stormwater Management Policy Guidelines
- EPA BMP Practices Manuals

Evaluate Contaminant Sources

- Combined Sewers

- Runoff
  Chestnut Street drainage
  Daisy Field drainage
  MDC drainage overall
  Village Brook drainage
  Tannery Brook drainage
  Longwood Avenue drainage
  Emanuel College drain
  Boston Gatehouse No. 1 discharge
  Park Drive drainage
  Fenway drainage
  Riverway drainage
  Jamaica Way drainage
  Park pathway system

Develop Corrective Measures

- Maintenance and Management Plan

- Enforcement

  Boston and Brookline Conservation Commissions, Health Officials, Police Departments
  NPDES Reporting
  Annual EIR Reports
  Maintenance and Management Plan per MOU

- Source Controls

Combined Sewers
    - Sewer separation
    - Eliminate illegal connections

Screening and corrections at inter-municipal connections

Urban Runoff
    - Non-structural corrective measures
        - Catch basin stenciling
        - Neighborhood spring and fall clean-up days
        - Street sweeping
        - Catch basin cleaning
        - Repair wash-outs
        - Material disposal and recycling
        - Spill prevention for storage tanks
        - Illegal dumping control

    - Structural
        - Repair catch basins
        - Repair curbing
        - Install deep sump drop inlets
        - Install solids separation devices
        - Construct/dredge forebays
        - Construct water quality swales
        - Install wet/dry detention basins

    - End of pipe treatments
        - Install solids separation devices
        - Forebays

Best Management Practices (BMPs)
Cited Literature
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

City of Boston Public Works Department - Highway Division files; City of Boston Public Works Department -Highway Division; *undated.*

Muddy River Maintenance Work Plan; Metropolitan District Commission; *undated.*

National Pollutant Discharge Elimination System (NPDES) Stormwater Permit Application (Part 2); Boston Water and Sewer Commission; May 17, 1993.

Town of Brookline, Massachusetts - Stormwater Management Plan; BETA Engineers • Scientists; May 1998.

National Pollutant Discharge Elimination System (NPDES) Stormwater Permit; Boston Water and Sewer Commission; September 1999.

Existing Best Management Practices (BMPs)
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

BMP	Type	Location	Notes
BWSC - NPDES Stormwater Management Program			
✓ Catch Basin & Storm Drain Maintenance	Non-structural	Various parts within the watershed	estimated of the ≈ 40,000 CBs in Boston, each CB cleaned once per 3 yrs.
✓ Illegal Sanitary Connections Remediation Program	Non-structural	Various parts within the watershed	as of 1990, 563 illegal connections were corrected city-wide
✓ Particle Separators	Structural	Fenwood Road	off-line separator on a 30" storm drain w/tributary area of ≈ 20 ac.
	Structural	Perkins Street & Parkman Drive	an off-line separator (Vortechs Stormwater Treatment System) was installed on 4/3/00 as part of the Historic Restoration of Jamaica Pond; separator will be maintained by BWSC
✓ Dry Weather Screening of Major Outfalls	Non-structural	City-wide	permitted outfalls inspected at least once every 5 years; program to involve smplg. 16 of the 79 major Boston outfalls per year; will incl. visual inspection @ low tide, flow & sed. accum. measurement, water qual. testing @ obsvd. flow, sewage contam. outfall to be listed on Illegal Sanitary Connections Remediation Prog., areas of 6" sed. noted for cleaning
✓ Stormwater Management Guidelines for Large Residential Facilities and Commercial Businesses	Non-structural	City-wide	guidelines currently being developed for managers of large residential facilities, restaurants and commerical business
✓ Residential Stormwater Monitoring Project	Non-structural	West Roxbury	residential property stormwater monitoring activities currently on-going
✓ Commercial Area Stormwater Monitoring Project	Non-structural	Dorchester	commercial property stormwater monitoring activities currently on-going

Existing Best Management Practices (BMPs)
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

BMP	Type	Location	Notes
City of Boston Public Works Department			
✓ Street Sweeping	Non-structural	City-wide	*Public Works Department - Highway Division* • 17 contract sweepers in Public Works Districts, daily (Mon,-Fri.), Apr.-Nov. • 7 contract sweepers in various areas, nightly (Mon.-Fri.), year-round • 1 contract sweeper on arterial routes, nightly (Mon.-Fri.), year-round • 7 contract sweepers in various areas, Sat. & Sun. nights, year-round • 7 City of Boston sweepers, city-wide, 7 days/week, year-round • 1,500 curb miles of city streets cleaned weekly • 75 "hand hokey" route cleaning personnel, highlight city area, 7 days/week • Public Works Dept. uses an avg. of 30,000 tons of salt/yr. on 785 mi. of road • approximately 110,000 cy per year removed from city streets
✓ Household Haz. Waste & Education Program	Non-structural	City-wide	prevents pollutants from entering the system; annual pamphlet/flyer mailed with customer bills; success based on State funding; BWSC to investigate mailings to actual property occupants
✓ Paint & Waste Oil Collection Program	Non-structural	City-wide	weekly (Sat.); flyer; MWRA funds disposal costs; BWSC provides personnel
✓ Management of Public Open Space Maintenance Practices	Non-structural	City-wide	• *BPRD*: Integrated Pest Mgmt. (IPM) systematic decrease in pesticide/toxic product usage; solid fertilizers only used • *MDC*: estimates ≈ 26 tons of salt/lane mile/year & 6 tons of sand/mile/year used on MDC managed roads
random notes from file	Non-structural	Various parts within the watershed	*BPRD* "The Design and Construction Division of the Boston Parks and Recreation Department (BPRD) is responsible for construction inspections. Sites are inspected on a weekly basis to ensure that sediment controls are in place. At the construction site, silt fences or hay bales are placed around existing catch basins." "The Department is aware of oil leaking from a former Brookline Public Works building underground storage tank. During rainstorms, groundwater carries the oil toward Willow Pond and Leverett Pond."

Existing Best Management Practices (BMPs)
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

BMP	Type	Location	Notes
Town of Brookline Stormwater Management Plan (May 1998)			
✓ Section 1.0 - Introduction	Non-structural	Village Brook & Tannery Brook storm drain systems	between 1990-1995, water quality monitoring revealed over 20 illicit connections to sanitary sewers, most which have been removed
	Non-structural	Village Brook, Tannery Brook & Longwood Avenue storm drain systems	Jan. 1995 - Brookline enters into a Consent Agreement (CWA-2-I-95-1023) with EPA to address stormwater management practices within Town; required to investigate & remove illicit connections in Village Brook, Tannery Brook & Longwood Avenue Drainage Areas in accordance with a definitive schedule; Agreement also reqd. specific stormwater practices be implemented: • increase avg. rate of street sweeping to twice per month, • main streets in comm. areas sweeping increase to 3 times/week; • increase rate of CB cleaning on main streets in commercial areas to twice/year (includes ≈ 25% of Town CBs); • begin program to replace wire trash receptacles with solid; • volunteer program for CB stenciling
✓ Section 2.0 - Municipal and Regulatory Authority	Non-structural	Various parts of the watershed	Brookline does not maintain a list of companies/industries with approved discharges (non-contact cooling, unpolluted process discharges) to storm drains and/or natural outlet approved by the Commissioner
✓ Section 3.0 - Stormwater and Sanitary Sewer Systems	Non-structural	unknown	DPW records indicate one (1) active NPDES Permit (No. MAG 070010) issued to MWRA for dewatering during a construction project
	Info.	adjacent to Leverett Pond (west)	Report indicates a "Drainage Area 11: Muddy River", comprised of ≈ 5,640 lin. ft. of piping for 39 acres & discharges thru a 24-in. into Leverett Pond
✓ Section 4.0 - Existing Stormwater Management Practices			
Catch Basin (CB) Maintenance	Non-structural	Throughout Brookline	Current CB maintenance included insp. & cleaning of arterial roadway CBs twice/yr. & side streets once/yr.; CB condition & sed. vol. recorded on standard forms & entered into Town CB tracking database; current CB prog. is in compliance with the EPA Consent Agreement; Route 9 CBs cleaned once/yr. by MHD; a routing network (line coverage) is being developed for CB cleaning and would link current CB database info.; system would eventually be linked to the Town's GIS
Storm Drain Cleaning	Non-structural	Throughout Brookline	storm drain cleaning and/or television insp. conducted on case-by-case basis

Existing Best Management Practices (BMPs)
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

BMP	Type	Location	Notes
Town of Brookline Stormwater Management Plan (May 1998)			
✓ Section 4.0 - Existing Stormwater Management Practices			
Street Sweeping	Non-structural	Throughout Brookline	"The Town conducts an extremely effective street sweeping program during the evening hours."; streets within the main comm. areas (Harvard, Washington and Beacon Streets & adjacent side streets) swept every 3rd day w/two (2) Town-owned and operated sweepers; two (2) remaining machines dedicated to the remainder of Town streets which are swept once/3 wks.; Route 9 annually swept by MHD; "...sweeping curtailed in the winter months"; removal of accumulated sand is a "priority" in the spring; Town sweeping prog. is in compliance with the Consent Agreement
De-icing of Municipal Streets	Non-structural	Throughout Brookline	currently uses sand to salt (sodium chloride) ratio of 7:1; Town plans to acquire equip. to apply calcium chloride; "Sand...is collected in the springtime through a rigorous street sweeping operation..."; Town has installed automated dispensing system in an unknown amount of de-icing trucks which dispensing 200 lbs. of mixture/lane mile; all 14 trucks will be automated by 1999; winter 1997-1998 = 3,600 tons of mixture used
Water Quality BMP Cleaning	Structural	Chestnut St. Drain/Willow Pond	"There is only one municipally owned and operated water quality best management practice (BMP) in Brookline."; consists of an oil/water sep. for a stormwater drainage system for the Chestnut Street Drain near Willow Pond; installed to intercept hydrocarbons generated from a 1995 petrol. release @ DPW; 1996 study indicated free phase petrol.. in soil; petrol.. in GW migrated to drain that discharged to Willow Pond; addnl. remedial actions being considered incl. GW extraction & bioremediation; separator cleaned ≈ 3-4/yr.
Catch Basin Stenciling Program	Non-structural	Throughout Brookline	stenciled message: "Don't Dump - Drains to the Muddy River"; Town appropriates funds annually to carry out prog., distrib. brochures & flyers; prog. in compliance with Consent Agreement; the Brookline Cons. Comm. (BCC) awarded a Lake & Pond Grant ($2,850.00) by DEM for stormwater educ. in the Hall's Pond drainage basin
Water Quality Controls for New Development	Possibly both	Throughout Brookline	soil erosion & sed. controls reqd. on all plans submitted to BCC; incl. all new development and const. projs. under Wetland Protection Act; reqd. to protect resources; new stormwater discharges proposed, BMPs must effectively remove 80% TSS as stipulated in the MSMP; maintenance & repairs exempt

Existing Best Management Practices (BMPs)
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

BMP	Type	Location	Notes
Town of Brookline Stormwater Management Plan (May 1998)			
✓ Section 4.0 - Existing Stormwater Management Practices			
Illicit Connection Identification and Removal	Both	Village Brook & Tannery Brook	39 illicit connection detected; all connections either removed or scheduled to be removed by December 1997
	Structural	Longwood Avenue	four (4) homes determined to be cross-connected to the Longwood Ave. storm drainage system; conclusions = four homes immed. connected to sanitary system; three homes unavailable for invest. be tested; repair drainage pipes in poor cond. as a result of TV inspec.; plugged drainage pipe discovered in sewer manhole to prevent storm overflow of sanitary wastes; after above were completed, contam. still evident, Town still investigating
Household Waste Disposal	Non-structural	Throughout Brookline	weekly curbside collection & disposal by Arthur Schofield Corp. (until 1999); 30% of solid waste stream recycled; in 1995 Town began replacing wire receptacles with solid, prog. to continue 'til 1998; household haz. waste collection day held twice/year, advertised thru newspaper, flyers & cable; in 1994 Town published "Brookline Environmental Guidebook", free to residents, avail. @ Town Hall; 3 stations in Town allow for waste oil drop-off
Structural Water Quality Controls	Structural	Throughout Brookline	"With the exception of basins that contain a drop inlet, each catch basin in town is equipped with an oil/water separator."
	Structural	Cypress & Franklin Streets	an 11,000 gallon Vortechs Stormwater Treatment System (gross particle separator) was installed in December 1999;

Existing Best Management Practices (BMPs)
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

BMP	Type	Location	Notes
Metropolitan District Commission (MDC) - Muddy River Maintenance Work Plan			
✓ Trash Barrels	Non-structural	Along the Muddy River	summer - daily; spring/fall - 1/3 days
✓ Litter Patrol	Non-structural	Along the Muddy River	weekly
✓ Catch Basins	Non-structural	Along the Muddy River	daily after grass season
✓ Street Sweeping	Non-structural	Along the Muddy River	"ideally once a week"
✓ Lawn Mowing	Non-structural	Bowker/Charles Along fences	every 10 days every 12 days
✓ Turf Maintenance	Non-structural	Along the Muddy River	aeration, overseeding & fertilization during spring/fall by Boston & Brookline bi-weekly weed control by Boston & Brookline; no maintenance by MDC
✓Leaf Removal	Non-structural	Along the Muddy River	spring/fall
✓ Tree Planting/Pruning	Non-structural	Along the Muddy River	"spring-but having a problem with keeping new trees"; tree pruning 1/5 yrs.
✓ Rodent Control	Non-structural	Along the Muddy River	"Rodent contract - June and as needed"
✓ Roadway Patching	Structural	Along the Muddy River	as needed

DRAFT OUTLINE
MAINTENANCE and MANAGEMENT PLAN

The long-term success of the Muddy River Flood Control, Water Quality and Habitat Enhancement Project will depend, to a large degree, on the level of post construction monitoring and continued maintenance.

The Maintenance and Management Plan will contain the following:

1. The Emerald Necklace management structure – an innovative public/private business management partnership,
2. Schedules, logs/checklists and reporting framework for monitoring and inspections by watershed location and park section,
3. Corrective and maintenance measures following specific storm events,
4. A horticultural fertilization and maintenance schedule for turf and upland plantings including;
    - Observations on the growth and success of shrubs, wetland and other habitat plantings
    - Provisions for modifying the landscape design should the plantings not be viable or not provide the level of success for enhancing habitat and wildlife species
5. Management of invasive vegetation,
6. Monitoring of fish and wildlife distribution and reproduction,
7. A BMP monitoring and maintenance schedule,
8. A pest and rodent control plan,
9. A monitoring and maintenance plan for historic structures,
10. Monitoring and maintenance of lighting, safety and public amenities,
11. Public education and environmental teaching.
12. Environmental permits and approvals needed to accomplish the maintenance,
13. Manpower requirements,
14. Capital costs,

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – May 16, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome & Comments Received

Fredie Kay, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II Revised Schedule of CAC Meetings
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

III Project Update
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

IV Presentation: Best Management Practices
David Noonan, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

Carlton L. Noyes, Sr. Environmental Scientist
Jason M. Cortell and Associates Inc.

V Letter Requesting Congressional Support of the Project
Fran Beatty, Senior Landscape Architect for Historic Parks
Boston Parks and Recreation Department

VI Questions and Answers (General Public) Wrap Up

Summary

I Welcome & Comments Received

Fredie Kay opened the meeting and asked for CAC members to introduce themselves.

John Burckardt reviewed the two mailings of materials that were distributed to the CAC in preparation for this meeting. He also reminded all present that additional copies of the meeting materials are available at this meeting.

Mr. Burckardt then mentioned a verbal comment made by CAC member Ed Cutler. Mr. Cutler expressed concern about the pace of the project, that CAC members would like to be making detailed decisions on project specifics instead of overview of topics presented at CAC meetings. Mr. Burckardt responded to Mr. Cutler's concerns by briefly reviewing the project schedule, reminding the CAC that the consultant team is still in the data collection phase of their work and asked CAC members for their continued patience until the more detailed discussion in the fall sessions.

II Revised Schedule of CAC Meetings

Bruce Conklin distributed the revised CAC meeting schedule. Mr. Conklin explained that the purpose of revising the CAC meeting schedule is to accommodate revisions in the master project schedule which now calls for the CAC review of the Draft Environmental Impact Report (DEIR) in January 2001. Mr. Conklin also emphasized that the sequencing of CAC meeting topics has been revised to better reflect the progress of work and better ensure more technical, substantive presentations at subsequent CAC meetings.

Mr. Conklin explained that two CAC meetings are necessary to present the culvert/open channel/dredging & disposal alternatives due to the considerable amount of information that will be presented at these meetings.

Mr. Conklin concluded by stating that the Charlesgate piece of the project will be under construction in 2001.

Fredie Kay acknowledged that some CAC members may not be able to attend all of the CAC meetings. Ms. Kay asked CAC members to review their summer and fall schedules. If members know they will not be able to attend a specific meeting(s), please contact John Burckardt at your earliest convenience. Ms. Kay added that if there are many CAC members who cannot attend a particular meeting, the project team will plan accordingly.

III Project Update

Bruce Conklin provided a brief project update summarizing the major activities the CDM team has been working on since the last CAC meeting on March 30, 2000. Specifically, Mr. Conklin spoke briefly about progress on the following project tasks:

- BMP presentation for the CAC meeting
- Revised master project schedule
- Developed water quality and sediment monitoring plans
- Review of water quality and sediment monitoring plans with regulatory authorities
- Completed landscape inventory in Back Bay Fens
- Completed wetlands delineation

Mr. Conklin added that in June the CDM team will finalize the water quality and sediment monitoring plans and submit them to the Boston and Brookline Conservation Commissions for their review and approval. The evaluation of staging and dredging areas will be conducted.

The landscape survey will be completed and documented. Materials in support of the June 13, 2000 CAC meeting will be compiled and distributed to the CAC.

Following Mr. Conklin's project update summary, a discussion followed which led to the following conclusions:

1. CAC members can get copies of the wetland delineation maps upon request to John Burckardt.

2. The Boston and Brookline Conservation Commissions are the regulatory authorities on the wetland delineations, unless an individual or agency files an appeal to the DEP. The CDM team is working with all applicable regulatory agencies, including the Boston and Brookline Conservation Commissions, to better assure agreement among all parties on the wetlands delineations.

IV Presentation: Best Management Practices

A copy of the presentation made by the CDM team is included as Attachment 2.

David Noonan began the presentation and emphasized that the purpose of the presentation was to present:

- An overview of BMPs, how the project team defines them, their importance, responsible entities for implementation, etc.

- An inventory of BMPs in the Muddy River watershed; summary of existing programs and components of each BMP plan and how these compare with a model BMP program.

- The process which the CDM team will utilize to further analyze existing BMPs, identify and review alternative BMP measures, and develop a comprehensive Maintenance Management Plan to ensure the long-term implementation of BMPs by the applicable public entities.

Following the presentation by Mr. Noonan and Carl Noyes there was considerable discussion, questions and comments that are presented below.

Discussion

- Several CAC members commented that the street sweeping practices by the City of Boston, as observed by residents in the Fenway in particular, are inconsistent with the narrative description of the city's street sweeping program contained in the CDM team's presentation. The CAC, in general, expressed a high degree of frustration with the quality and frequency of street sweeping that takes place in and around the Muddy River and surrounding neighborhoods.

- The CAC commented that the City of Boston should make its household hazardous waste and waste oil collection locations more accessible to those who rely upon public transportation and to increase the time when these services are available to residents.

- Several CAC members commented on the need for better enforcement of existing BMP measures and asked what steps can and should be taken to improve the implementation of BMPs and enforcement actions needed to ensure better compliance with BMP programs. The CDM project team acknowledged that this is a critical question for which an easy answer is not available. For some BMP measures, existing federal and state permitting requirements provide a vehicle for enforcement and monitoring of BMP plan implementation.

- The CAC formally asked the CDM team to determine what entity within the City of Boston will assume responsibility for better addressing the challenges and correcting the problems associated with the existing street sweeping program.

- The CAC asked for clarification regarding the life cycle or performance measure that the CDM project team proposes for BMP measures. In other words, how many years are we seeking to achieve before it will be necessary to again dredge the Muddy River? The CDM project team responded that the project will set a planning goal and criteria by which BMP measures will be evaluated for potential implementation. As part of this analysis, Mr. Noonan told the CAC that the project team will identify capital and operating costs for each BMP.

- Several CAC members, particularly Kate Bowditch, and Bob Zimmerman from the Charles River Watershed Association, expressed their expectation that a more detailed program of specific BMP alternatives would be presented for review by the CAC. They emphasized the need for the project to focus more on source control within the tributary drainage system rather than end-of-pipe solutions to sediment control. They suggested that the BMP program include measures such as: cisterns on private property; retention ponds; reduction of impervious surface areas; demonstration projects; and the disconnection of sump pump and downspout connections from the municipal drainage system. They also expressed their expectation that the project should consider innovative BMP measures. The CDM project team responded that the detailed analysis of specific BMP measures proposed for specific locations will be conducted over the next several months. The results of this analysis and the BMP recommendations will be presented at the November 2000 CAC meeting.

- Several CAC members asked the project team how they will assess the effectiveness of existing BMPs that the municipalities state they are doing. Some CAC members stated that the inventory of measures is a good first step but that analyzing how well they are being implemented and the effectiveness of each measure is lacking. Mr. Noyes responded that the effectiveness of existing and proposed BMPs will be based on the results of the water quality monitoring program. Mr. Noonan added that the water quality monitoring program will enable the CDM project team to identify and calculate sediment and bacteria loadings from storm drains along specific reaches of the river. This will enable the project team to identify "hot spots" and propose BMP measures suitable for the magnitude of the problem in different areas.

- A couple of CAC members expressed their concern that the project team will not focus on the larger, more complex issues associated with source control but will instead focus on the smaller BMP measures that are more easily implementable and within the control of the project proponents (Boston, Brookline). Mr. Conklin acknowledged that not all upstream BMP measures within specific tributary areas likely will be evaluated in detail. Mr. Noonan responded that the CDM project team will identify and focus on BMP measures that address known problem areas and achieve significant benefits in relation to their cost.

- CAC members emphasized that some proposed BMP measures would have significant historic resources impacts and these have to be assessed before any alternative is recommended for implementation.

- In general the CAC expressed a desire to have the project team presentations focus on more of the technical details of the specific topic.

V Letter Requesting Congressional Support of the Project

Fran Beatty described the draft letter to key Congressional leaders in support of funding for the Muddy River Project. This draft letter was mailed to CAC members prior to the meeting. She also introduced Dick Heidelbrecht from the U.S. Army Corps of Engineers (ACOE). Mr. Heidelbrecht explained that the ACOE is evaluating the Muddy River improvement plan, as identified in the Environmental Notification Form (ENF), to determine and advise the Congress if the project is worthy of funding for improved flood control and habitat restoration within the aquatic environment. If the Corps reports favorably on the plan then city and state officials will request federal funding for the project. .

Ms. Beatty further explained that the draft CAC letter received no comments, and therefore she prepared final letters to Congress. She encouraged CAC members to sign the letters in support of funding for the project.

VI Questions and Answers (General Public)

A couple of members of the general public who were present provided comments on the lack of implementation of BMPs in Boston, particularly leaf control and street sweeping, and road salt application practices by the MDC, Boston and Brookline. The project team was asked to assess these practices in each municipality.

VII Wrap Up

Kate Bowditch informed the CAC that this was her last CAC meeting as she and her family are moving to Africa for a year. Ms. Bowditch expressed her gratitude for working with the CAC and encouraged us all to work hard and make the most of this unique opportunity to improve the Muddy River. *This letter will be sent to all CAC members upon receipt from Ms. Bowditch.*

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for Tuesday, June 13, 2000, 6 pm to 8:30 pm. *Location will be the Northeastern University* ***Egan Center*** *at the end of Forsyth Street, next to Ruggles Station.* The meeting topic is Habitat Improvement and Rare Species.

Enclosures:	Attachment 1 – Sign-In Sheet
	Attachment 2 – CDM Consultant Team Presentation

Emerald Necklace Citizens Advisory Committee

Attachment 1

Sign-In Sheet

Meeting

May 16, 2000

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Kate	Bowditch	Brookline Conservation Commission	Kate Bowditch
Isabella M.	Callanan	Friends of the Muddy River	
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	Ed Cutler
Pamela	DiBona	Charles River Watershed Association	Bob Zimmerman for Pam
Margaret	Dyson	Historic Massachusetts	Margaret Dyson
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	Frances Allon Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	Irene H. Gillis
Alan	Goodman	The Abbey Group	
George	Haggerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	
Richard	Heath	Franklin Park	Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

May 16, 2000

Name		Affiliation	Signature
Frances J.	Kemp	Fenway Resident Friends of the Muddy River FCA	Frances J. Kemp
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
John A.	Martin	Emerald Necklace Conservancy	John A. Martin
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	
Jane Walker	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	Sabal
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	Joyce Starner
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

May 16, 2000

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Name	Affiliation/Address	Phone	E-mail
Gary Claiborne	432 Columbia St Cambridge, MA Pressley Associates	491-5300	gclaiborne@pressleyinc.co
Anne Covert	14 Monmouth Ct Brookline	738-0107	
JJ CALLAHAN	CORTELL & ASSOCIATES	(781) 890-3737	CORTELL@CORTELL.C
SCOTT BLODGETT	WENTWORTH INST. OF TECH.	(617) 277-3684	BLODGETTS@STUDENT.
Betsy Shure Gross	EOEA		
Laura Rome	EOEA/MEPA	617-626-1030	laura.rome@state.m
ED BURKE	W FENS BOS ASS	536-1639	
Amy M. Schofield	Boston Water & Sewer	617-737-6344	schofieldam@bwsc.or
David d. Mendelsohn	EOEA/DEM	(617) 626-1316	David.Mendelsohn@Sta MA.US
SCOTT DUMONT	CORCORAN JENNISON	822 7274	SDumont@CorcoranJENNISON.com
Sr Anne M. Donovan	Emmanuel College	735-9822	AMDonovan@aol.c
Richard Heidebrecht	COE	978-318-8513	
Fran [illegible]	Bos. Parks		
JAY CORTELL	CORTELL	781-890-3737 x111	cortell@cortell.com
F[illegible] Conklin	CIM	617-152-6543	[illegible]nkli bre[illegible]
John Burckardt	PB c/o Boston Parks	635-4505	jburckardt@ci.boston.ma
Bob McDonnell	77.11 26 Tavern Rd. Boston	373-5330	
Carl Noyes	Cortell Assoc.		

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

May 16, 2000

\\parksmail\bospark\Jburckardt\CAC Meetings\CAC-5 May 16, 2000\[CAC Sign-in - May 16, 2000.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Paul Denut	CDM		
Freddie Kay	MODR		
David Noonan	CDM		
Peter Ditto	Brookline DPW		

MEMORANDUM

Date: June 9, 2000

To: Files

From: John F. Burckardt

Re: Seminar on Invasive Wetland Plants
Sponsored by New England Chapter, Society of Wetland Scientists
Held at US Army Corps of Engineers, 696 Virginia Road, Concord, Massachusetts

I attended this seminar particularly for the relevance to the Muddy River project, which includes issues regarding invasives at several locations. Overall, the opinion of the presenters (see attached agenda) was that invasives are harmful to wetlands in that they overcome more diverse mixtures of native plants. For this reason, control is necessary and desired, according to the presenters.

Following is a summary of some points made at the seminar. Attached is some information on invasives handed out at the seminar.

Background: In general, the invasives arrived in this region when people brought in non-native plants. In the 1800s and some of the 1900s, it was a conversation piece to have an exotic or non-native plant growing in one's garden. Many plants of all varieties arrived from Europe, Asia, Africa, and other parts of North America. In time, some of these plants came to propagate in natural settings. The plants that then came to dominate and overtake native species have been classified as invasives.

One participant noted that 15,000 years ago, much of New England was tundra and the existing native species at one time "invaded" New England. The key distinction between the migration of plant species after the glacier and current invasions is the time scale. The current invasives have been imported by human intervention, and the rapid development of the land has hastened their spread. With migration occurring over centuries and millennia, natural balance can be achieved. The current time scale is too quick and a natural balance does not emerge.

Problems with Invasives: While invasives come to dominate in many settings, a major problem exists when rare or endangered species of plants are threatened by the invasives. Also, invasives often form a mono-culture, lowering the habitat value.

Control of Invasives: Control can be achieved by:
- mechanical means (e.g., excavating or pulling out plants [weeding])
- cutting/mowing
- shade
- biological means (e.g., introducing bugs that eat the plant)
- chemicals

Some examples of effective means for control of specific invasives include:
- Japanese knotweed – cut 3 to 4 times a year for at least 3 successive years.
- Phragmites – excavation/dredging to remove; chemical means
- Purple Loosestrife – biocontrol with beetles.

Wetland Replication Projects: Often new wetland replication areas become dominated by invasives before the desired planting can take. If the climax species are planted, they often struggle in the initial years and are easily dominated by invasives. A better strategy is to plant non-invasive pioneer species, which grow fast and provide shelter for climax species to take hold and eventually dominate.

Many agreed the current period of 2 years under the Wetland Protection Act for establishment of wetland replacement areas was not enough for a successful project that doesn't easily become dominated by invasives. On the other hand, the Corps of Engineers requires 3 years of management followed by an assessment in the 5th year.

The concept of "mitigation banking" was presented. Rather than have little projects establish small wetlands (that may not function well), have several projects contribute to a bank to construct a significantly sized replacement area that can be managed to obtain greater value as a wetland. One participant noted that the state needs a vision of wetland protection goals to effectively create a framework into which "mitigation banking" could fit. Another participant noted that smaller, closely spaced wetlands may be of greater wildlife value, as it is easier to travel from wetland to wetland.

Other Resources:

There is a Massachusetts invasive plant group beginning that will monitor the locations and migration of invasives. It will also try to work with Conservation Commissions to develop standard methods for invasive control, so that each invasive management project does not have to go through extensive review prior to approval.

Information about invasives and control can be found at several web sites. One site at UConn is: www.eeb.ucon.edu/invasives .

SOCIETY OF WETLAND SCIENTISTS
NEW ENGLAND CHAPTER

INVASIVE PLANTS IN NEW ENGLAND WETLANDS

at the
U.S. Army Corps of Engineers - New England District
696 Virginia Road
Concord, Massachusetts

AGENDA

FRIDAY, JUNE 9, 2000
8:30 am – 3:30 pm

8:30 – 9:00	**Registration** (beverage and muffin included)
9:00 – 9:10	**Welcome and announcements** Douglas Sparrow, President of SWS-NE LTC John Rovero, New England District Corps of Engineers
9:10 – 10:40	**The Villains: Current and Future Problem Species** Moderator: Barbara Keller, Ph.D., Adjunct Professor, Plant Ecology *Rhamnus* spp. - James MacDougall: Essex County Greenbelt Association *Polygonum cuspidatum* – Donna Ellis: UConn and CT Invasive Plant Working Group *Lythrum salicaria* biological control – Donna Ellis 'Unknown' invasives to watch for – Les Mehrhoff, Ph.D.: UConn Torrey Herbarium
10:40 –10:55	**Break** to prepare for field trip
10:55 – 12:30	**Field trip** (wear appropriate gear for wet conditions) Gerry Smith of Aquatic Control Technologies and James MacDougall will discuss pesticide applications as they could be used on the wetlands visited.
12:30 – 1:30	**"Lunch With a Speaker"** (sandwich, chips, and beverage included in workshop fee)

1:30 -- 3:00 **Invasive Species Issues Panel**

Moderator: Ruth Ladd, Corps of Engineers

→ Gerry Smith: Aquatic Control Technologies
Tim Simmons: Massachusetts Natural Heritage and Endangered Species Program, Restoration Ecologist
Rick Van de Poll, Ph.D.: Antioch New England Graduate School

Concepts/questions which may be discussed:

- How to avoid invasives in mitigation, particularly when they are in the site's watershed? How much flexibility should be allowed by agencies on "in kind"?
- Would longer time periods (in MA, especially) to meet vegetative cover criteria allow for better designs which would be more resistance to invasive species?
- Environmental/philosophical/political/social problems with various types of control techniques (herbicide, biological approaches, fire, etc.)
- Limiting plantings to New England genotypes.
- How are wetland landscapes changing irrevocably and the impacts of that? What is attainable in mitigation based on those changes?

3:00-3:30 **Wrap-up**: What's next in science, regulations, policies? What are some priorities for research and education?

Moderator: Catherine Owen, Ph.D., Franklin Pierce College

KEY

LIFEFORMS

T = tree
S = shrub
V = vine
H = herbaceous plant
G = grass
A = aquatic

HABITATS

U = uplands (all upland habitats including closed-canopy forests, second-growth woods, fields, grasslands, ridge tops, sand barrens, pitch pine scrublands etc.)
O = open areas (fields, grasslands, sand barrens, dry meadows etc.)
W = wetlands (swamps, marshes, wet meadows, fens, bogs, flood plains, flood plain forests, pond and stream shores)
L = lakes (ponds, in impounded water)
R = rivers (streams, in running water)
C = coast (sand dunes, rocky headlands, upper edges of salt water tidal marshes)

This List and the Criteria for listing were developed by the George Safford Torrey Herbarium, University of Connecticut, in conjunction with the State Geological and Natural History Survey of Connecticut and the Connecticut Invasive Plant Working Group. For a copy of the Criteria, please visit the Invasive Plant Working Group web page at **http://www.eeb.uconn.edu/invasives**

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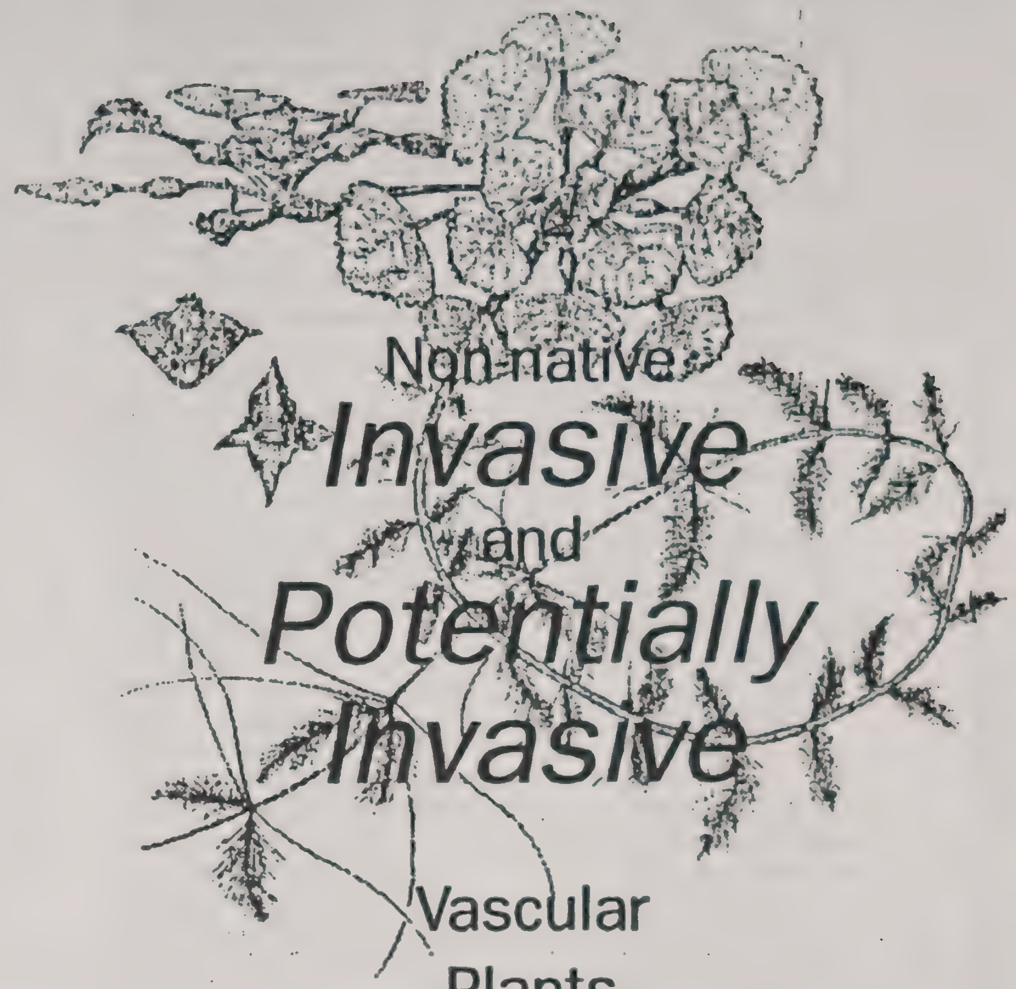
USDA



Non-native *Invasive* and *Potentially Invasive* Vascular Plants in Connecticut

JANUARY 2000

WIDESPREAD AND INVASIVE

SCIENTIFIC NAME	COMMON NAME	LIFEFORM	HABITAT
Ailanthus altissima (Mill.) Swingle	Tree-of-heaven	T	U
Alliaria petiolata (Bieb.) Cavara & Grande	Garlic Mustard	H	U
Berberis thunbergii DC.	Japanese Barberry	S	U
Celastrus orbiculatus Thunb.	Asiatic Bittersweet	V	U
Centaurea maculosa Lam.	Spotted Knapweed	H	O
Elaeagnus umbellata Thunb.	Autumn Olive	S	O
Euonymus alatus (Thunb.) Sieb.	Winged Euonymus	S	U
Euphorbia cyparissias L.	Cypress Spurge	H	O
Frangula alnus Mill.	European Buckthorn	S	U
Hesperis matronalis L.	Dame's Rocket	H	U
Lonicera X bella Zabel	Bella Honeysuckle	S	U, W
Lonicera japonica Thunb.	Japanese Honeysuckle	V	U, W
Lonicera morrowii A. Gray	Morrow's Honeysuckle	S	U, W
Lythrum salicaria L.	Purple Loosestrife	H	W
Nasturtium officinale R. Br.	Watercress	H	W
Phragmites australis (Cav.) Trin.	Common Reed	G	U, W
Polygonum cuspidatum Sieb. & Zucc.	Japanese Knotweed	H	U, W
Potamogeton crispus L.	Crispy-leaved Pondweed	A	R, L
Rhamnus cathartica L.	Buckthorn	S	U
Robinia pseudoacacia L.	Black Locust	T	U
Rosa multiflora Thunb.	Multiflora Rose	S	U
Vincetoxicum nigrum (L.) Moench	Black Swallow-wort	H,V	U
Vincetoxicum rossicum (Kleo.) Barb.	Swallow-wort	H,V	U

RESTRICTED AND INVASIVE

SCIENTIFIC NAME	COMMON NAME	LIFEFORM	HABITAT
Ampelopsis brevipedunculata (Maxim.)	Porcelain berry	V	U
Cabomba caroliniana A. Gray	Fanwort	A	L, R
Cardamine impatiens L.		H	U
Egeria densa Planchon	Brazilian Water-weed	A	L, R
Froelichia gracilis (Hook.) Moq.	Cottonweed	H	O
Humulus japonicus Sieb. & Zucc.	Japanese Hops	H,V	W, U
Hydrilla verticillata (L. f.) Royle	Hydrilla	A	L, R
Iris pseudacorus L.	Yellow Iris	H	W
Lepidium latifolium L.	Tall Pepperwort	H	C, O
Lysimachia vulgaris L.	Garden Loosestrife	H	W
Microstegium vimineum (Trin.) A. Camus	Japanese Stilt Grass	G	U
Myriophyllum heterophyllum Michx.	Variable Water-milfoil	A	L, R
Myriophyllum spicatum L.	European Water-milfoil	A	L, R
Rubus phoenicolasius Maxim.	Wineberry	S	U
Trapa natans L.	Water Chestnut	A	L, R
Tussalago farfara L.	Coltsfoot	H	U, W

This list has been developed using criteria created for this purpose. Species on the list are either potentially invasive or invasive. Invasive species are either widespread or have a restricted range in Connecticut. These two terms are geographic descripto [illegible] d do not imply degree of invasiveness. The list is intended to be an educational tool. This list is not static and will be reav [illegible] in December 2000. A species as listed here includes all subspecies, varieties, forms and cultivars. Life form

POTENTIALLY INVASIVE

SCIENTIFIC NAME	COMMON NAME	LIFEFORM	HABITAT
Acer ginnala L.	Amur Maple	T	U
Acer platanoides L.	Norway Maple	T	U
Acer pseudoplatanus L.	Sycamore Maple	T	U
Aegopodium podagraria L.	Goutweed	H	W
Aira caryophyllea L.	Silver Hairgrass	G	O
Allium vineale L.	Wild Garlic	H	U
Amorpha fruticosa L.	False Indigo	S	W
Arthraxon hispidus (Thunb.) Makino		G	O, W
Berberis vulgaris L.	Barberry	S	U
Bromus tectorum L.	Drooping Brome-grass	G	O
Butomus umbellatus L.	Flowering-rush	H	W
Callitriche stagnalis Scop.		A	R, W
Cirsium arvense (L.) Scop.	Canada Thistle	H	O
Datura stramonium L.	Jimson-weed	H	C
Elaeagnus angustifolia L.	Russian Olive	S	U
Elsholtzia ciliata (Thunb.) Hylander	Elsholtzia	H	U
Euphorbia esula L.	Leafy Spurge	H	O
Geranium nepalense Sweet	Nepalese Crane's-bill	H	U
Glechoma hederacea L.	Gill-over-the-ground	H	W
Kochia scoparia (L.) Schrader	Summer Cypress	H	C
Ligustrum obtusifolium Sieb. & Zucc.	Border Privet	S	U
Ligustrum ovalifolium Hassk.	California Privet	S	U
Ligustrum vulgare L.	European Privet	S	U
Lonicera maackii (Rupr.) Maxim.	Amur Honeysuckle	S	U
Lonicera tatarica L.	Tatarian Honeysuckle	S	U
Lonicera xylosteum L.	European Fly-honeysuckle	S	U
Lychnis flos-cuculi L.	Ragged Robin	H	O
Lysimachia nummularia L.	Moneywort	H	W
Marsilea quadrifolia L.	Water Shamrock	H	L
Miscanthus sinensis Anderss.	Eulalia	G	O
Myosotis scorpioides L.	Forget-me-not	H	W
Myriophyllum aquaticum (Voll.) Verdc.	Parrotfeather	A	L
Nelumbo lutea (Willd.) Pers.	American Water Lotus	A	L
Najas minor Allioni	Eutrophic Water-nymph	A	L
Ornithogalum umbellatum L.	Star of Bethlehem	H	U
Paulownia tomentosa (Thunb.) Steudel	Empress-tree	T	U, C
Phalaris arundinacea L.	Reed Canary-grass	G	W
Poa compressa L.	Canada Blue-grass	G	U
Polygonum cespitosum Blume		H	U
Polygonum perfoliatum L.	Mile-a-minute Vine	V, H	U
Populus alba L.	White Poplar	T	U
Pueraria lobata (Willd.) Owhi	Kudzu-vine	V	U
Ranunculus ficaria L.	Lesser Celandine	H	U, W
Rosa rugosa Thunb.	Japanese Rose	S	C
Rumex acetosella L.	Sheep Sorrel	H	U
Silphium perfoliatum L.	Cup-plant	H	U
Solanum dulcamara L.	Climbing Nightshade	H, V	U, W
Valeriana officinalis L.	Garden-heliotrope	H	U
Veronica beccabunga L.	Brooklime	H	W

Invasive Plant Information Sheet

Japanese Knotweed

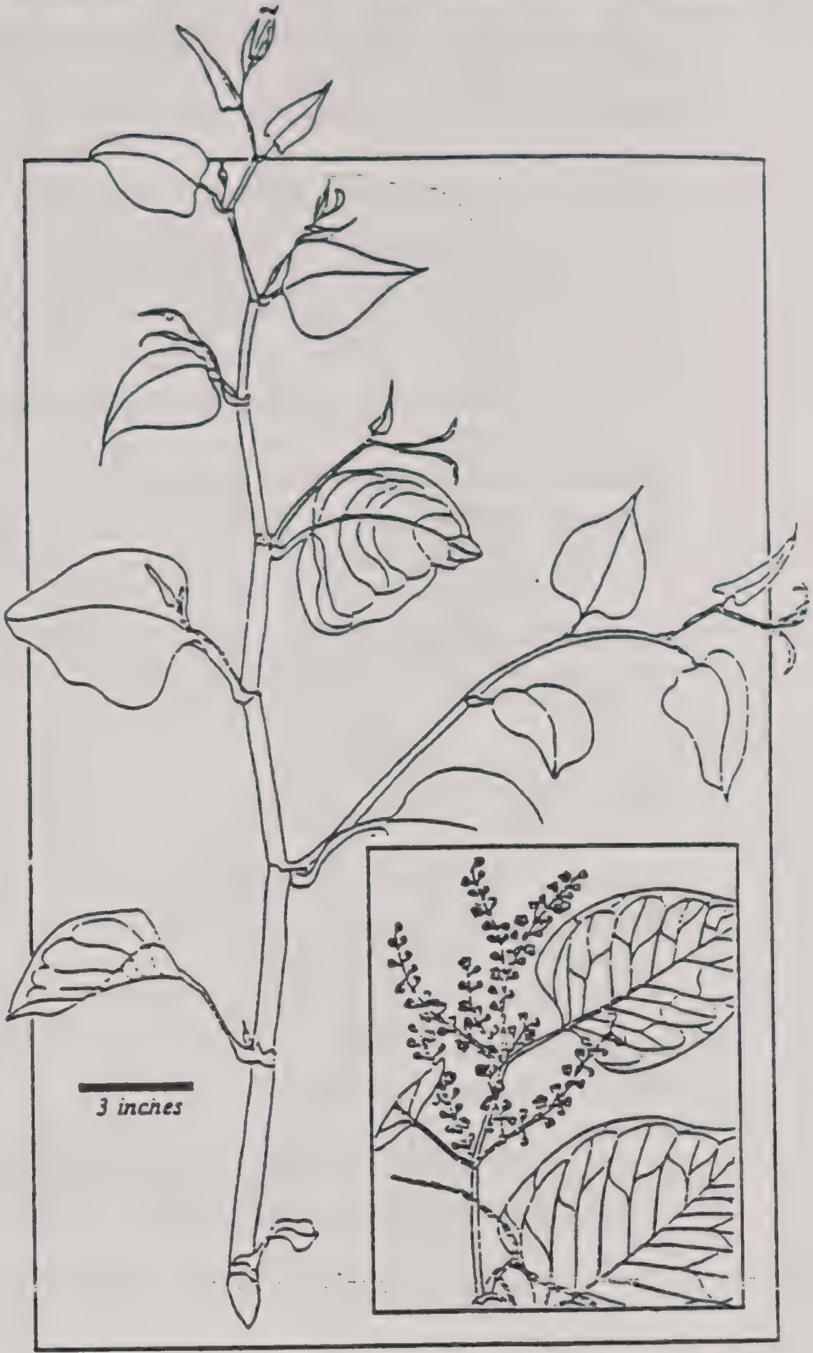
Polygonum cuspidatum Sieb. & Zucc.
Buckwheat Family (Polygonaceae)

Status: Increasing and invasive in Connecticut, primarily at disturbed sites.

Description: Japanese knotweed is a fast-growing herbaceous perennial that grows in large clumps three to six feet in height. It has hollow stems similar to bamboo, with swollen joints along the stem. Leaves are broadly egg-shaped, with pointed tips and squarish bases. The flowers are greenish white and profuse, growing in slender fingerlike clusters where the leaves meet the branches.

Preferred habitat: This plant occurs in a wide variety of habitats, in many soil types, and a range of moisture conditions. It appears to be found primarily in disturbed open areas with plenty of sun; shade depresses its growth. Edges of roadways and streambanks are common locations at which to find Japanese knotweed.

Seasonal cycle: In Connecticut, leaves appear on Japanese knotweed in April. Flowers, which develop in August and September, are pollinated by bees and other insects. The seeds mature about two weeks after the plant flowers and are dispersed by wind. Once established, the species reproduces primarily through its extensive rhizomes, which may reach 45-60 feet in length.



Inset shows flower. (Main illustration by Dott Emmett, courtesy of Blackwell Scientific, Inc.; inset illustration from "An Illustrated Flora of the Northern United States and Canada," 1913, Dover Publications)

Distribution: Native to Japan, Japanese knotweed was introduced into the United States in the late 1800s as an ornamental. The species has been widely cultivated and has escaped and naturalized. It is now widely distributed throughout the eastern United States and is found as far north as Nova Scotia and Newfoundland and as far south as North Carolina. It is also found in much of the midwest and in the coastal areas of Washington and Oregon.

Other points of interest: The early emergence of Japanese knotweed leaves in the spring and its stand-forming habit produce a dense canopy beneath which few other plant species can survive. In addition, the persistent accumulation of stem litter within established stands also reduces species diversity and damages wildlife habitat.

Japanese knotweed is a wild edible. Young shoots up to one foot in height can be harvested early in the spring, then steamed or boiled for four to five minutes and served like asparagus. Slightly older stems can be used to make a rhubarb-like jam by peeling and boiling the sour rind with sugar and pectin.

This plant was classified as *Reynoutria japonica* by Houttuyn in 1777 and as *Polygonum cuspidatum* by Siebold in 1846. Recently, it has been suggested that it should be reclassified as *Fallopia japonica*. Japanese knotweed is also known by the common names Mexican bamboo and Japanese fleece flower. A similar species, *Polyganum sachalineuse*, is much less common and appears to escape only infrequently, if at all. It can be distinguished from *P. cuspidatum* primarily by its larger size, greenish flowers, and heart-shaped leaves which gradually taper to the tip.

Control: It is extremely difficult, if not impossible, to eradicate large established stands of Japanese knotweed. However, establishment can be prevented fairly easily by removing plants before they become firmly entrenched. Current control methods include both mechanical and herbicidal treatments. Mechanical control includes cutting with persistence, at least three cuts in one growing season. Herbicides such as glyphosate (active ingredient in Roundup®) may be more effective when applied to the regrowth of cut stems. Glyphosate is a non-selective herbicide and great care should be taken in its usage.

Additional information sources:

Gray's Manual of Botany. Eighth edition, corrected printing. M. Fernald. D. Van Nostrand Company. New York, 1970.

Element Stewardship Abstract for *Polygonum cuspidatum*, Japanese knotweed. Leslie Seiger. The Nature Conservancy, 1992. Unpublished document.

Fallopia japonica (Houtt.) Ronse Decraene (*Reynoutria japonica* Houtt., *Polygonum cuspidatum* Sieb. & Zucc.). D. Beerling, J. Bailey, and A. Conolly. Journal of Ecology, 1994, 82, 959-979

A Field Guide to Edible Wild Plants (Eastern and Central North America). L. A. Peterson. Houghton Mifflin Company, New York, 1977.

Diagnostic information: *Leaves:* Petioled, round-ovate, truncate to slightly cuneate at base, abruptly cuspidate, becoming firm, and 2"-10" long. *Flowers:* Greenish-white, dioecious, in forking axillary panicles. *Fruit:* Calyx wing-angled, 1/3" long; achene shining, trigonous, about 1/5" long. *Stems:* Erect, glaucous, often mottled, widely bushy-branched, 3' - 8' high; ocreae membranous, tubular; rhizomes are stout, subterranean (up to 45 to 60 feet in length).

H. Brunelle and B. Lapin / Revised March 25, 1996

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Geological & Natural History Surve
Natural Diversity Data Base
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Management of Glossy Buckthorn (Rhamnus frangula):

Excerpted from Plant Conservation Alliance
(http://www.nps.gov/plants/alien/factmain.htm), BLM
with additions from experiences in Massachusetts.

CURRENT MANAGEMENT APPROACHES: Mechanical, physical and chemical methods are available for control of glossy buckthorn (Rhamnus frangula), an invasive exotic plant.

Hand-pulling: Where small numbers of plants are found within the forested landscape, it is appropriate to hand-pull plants. Annual monitoring is recommended to remove reprouts and new seedlings. Uprooting of 1/2 inch diameter seedlings by hand or up to 1 1/2 inch diameter using a weed wrench is effective, but care should be taken to avoid excessive disturbance to the soil, which can release buckthorn seeds stored in the soil. Lack of groundcover offers a better substrate for seeds to germinate (pers. com. -T. Wessels). Chip piles, pine litter and exposed duff are ideal germinating beds for seeds. Mowing woods roads with brush-hogs and skidding logs on unfrozen ground create an ideal environ for germination of buckthorn seeds. Once plants become established the local seed bank increases dramatically creating stands of 30-60 stems per square meter.

Herbiciding: Careful application of herbicides has been found to effectively control buckthorn in Illinois, Minnesota and Massachusetts. The McHenry County, Illinois, Conservation District (MCICD) reports excellent results using a triclopyr herbicide (Garlon) at the rate of 1:4 herbicide:water with dye on cut stumps during the growing season, from late May to October. The product label suggests avoiding treatment during the spring sap flow. To extend the work season, the use of a triclopyr herbicide (full strength) was also applied to cut stumps during winter and was reported to be effective by MCICD and the Minnesota Region V State Parks.

Frill application (applying herbicide into the cambial layer of fresh cuts on the tree trunk) using the 1:4 rate of triclopyr herbicide with oil (Kerosene or diesel fuel) and dye was also effective. Experiments at the University of Wisconsin Arboretum report good results using a mixture of 1 part triclopyr herbicide to 7 parts oil on cut stumps, or a 1 part triclopyr herbicide to 16 parts oil mixture applied as a basal bark treatment to stems less than 5 inches across.

For fall and winter applications, the Minnesota Department of Natural Resources, Region V State Parks Resource Management has used a 1 part glyphosate herbicide (Roundup) to 5 parts water mixture applied immediately to cut stumps using a hand sprayer. Initial checks indicated over 85 percent control at the test site. These results have not been replicated in Massachusetts. A recommended cut-stem application of full strength (41%) Roundup controls >90 % of those treated. Monitoring is recommended as there may be resprouting from old stumps two to three years after control.

Use pesticides wisely: always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations. Pay close attention to the units of dilution in research papers. Some use per cent solutions of liquid concentrate (1.5 %), others use ratios(1:5), some use volumetric(1.5 oz./gal.). I strongly recommend that if you publish your results: please convert your method of dilution to percent active ingredient. Notice: mention of pesticide products does not constitute endorsement of any material.

Prescribed fire is one method proposed for controlling buckthorn seedlings in fire-adapted natural areas, from late March to early May, most recently by Boudreau and Willson. Unfortunately, buckthorn seedlings often grow in low litter areas, unsuitable for frequent prescribed fire. In dense stands, seedlings and saplings may be cut and dropped on site, creating fuel for future fires. Buckthorn seedlings appear vulnerable to fire, perhaps due to their poorly established root structure. Fire will top kill a mature plant, but resprouting does occur.

References

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11. Susan Wieseler, Minnesota Department of Natural Resources, Rochester, MN Sue.Wieseler@dnr.state.mn.us

Phragmites
Phragmites communis

A highly invasive (high on The Nature Conservancy's "hit list") herbaceous grass, presumably a native species. Seen all along the highways of Connecticut, *Phragmites* reaches up to 20 feet tall and is easily recognized driving by at 70 miles per hour by its height, stems and fluffy grey/tan seed heads. *Phragmites* spreads at an incredible rate, by a variety of methods. In sparse stands of the grass, shoots that fall over become horizontal runners. Shoots and rhizomes grow from the nodes, spreading the plant far beyond its original bounds.

STEM: Brittle, bamboo-like.

HABITAT: Associated with coastal brackish water; disturbed, moist sites; along highways.

USES: Source of cellulose; in England, used for thatching.

Glossary of botanical terms | Back to main page | Do an AltaVista search on this plant | All species, Common Name

Excerpts from

The Nature Conservancy
ELEMENT STEWARDSHIP ABSTRACT
for *Phragmites australis*, Common Reed

Stable populations may be difficult to distinguish from invasive populations, but one should examine such factors as site disturbance and the earliest collection dates of the species to arrive at a determination. If available, old and recent aerial photos can be compared to determine whether stands in a given area are expanding or not (Klockner, pers. comm. 1985).

Phragmites is a problem when and where stands appear to be spreading while other species typical the of the community are diminishing. Disturbances or stresses such as pollution, alteration of the natural hydrologic regime, dredging, and increased sedimentation favor invasion and continued spread of Phragmites (Roman et al. 1984). Other factors that may have favored recent invasion and spread of Phragmites include increases in soil salinity (from fresh to brackish) and/or nutrient concentrations, especially nitrate, and the introduction of a more invasive genotype(s) from the Old World (McNabb and Batterson 1991; Metzler and Rosza 1987, see GLOBAL RANGE section for further discussion).

Michael Lefor asserts that one reason for the general spread of Phragmites has been the destabilization of the landscape (pers. comm. 1993). In urban landscapes water is apt to collect in larger volumes and pass through more quickly (flashily) than formerly. This tends to destabilize substrates leaving bare soil open for colonization. Watersheds throughout eastern North America are flashier due to the proliferation of paved surfaces, lawns and roofs and the fact that upstream wetlands are largely filled with post-settlement/post agricultural sediments from initial land-clearing operations.

Many Atlantic coast wetland systems have been invaded by Phragmites as a result of tidal restrictions imposed by roads, water impoundments, dikes and tide gates. Tide gates have been installed in order to drain marshes to harvest salt hay, to control mosquito breeding and, most recently, to protect coastal development from flooding during storms. This alteration of marsh systems may favor Phragmites invasion by reducing tidal action and soil water salinity and lowering water tables.

Phragmites invasions may threaten wildlife because they alter the structure and function (wildlife support) of relatively diverse Spartina marshes (Roman et al. 1984). This is a problem on many of the eastern coastal National Fish and Wildlife Refuges including: Brigantine in NJ; Prime Hook and Bombay Hook in DE; Tinicum in PA; Chincoteague in VA; and Trustom Pond in RI.

Plant species and communities threatened by Phragmites are listed in the Monitoring section. Some of these instances are described below:

1. Massachusetts, a brackish pondlet near Horseneck Beach supports the state rare plant MYRIOPHYLLUM PINNATUM (Walter) BSP, which Phragmites is threatening by reducing the available open water and shading aquatic vegetation (Sorrie, pers. comm. 1985).

2. Maryland, at Nassawango Creek, a rare coastal plain peatland community is threatened by Phragmites (Klockner, pers. comm. 1985).

3. Ohio, at the Arcola Creek wetland, Phragmites is threatening the state endangered plant CAREX AQUATILIS Wahlenb. (Young, pers. comm. 1985).

Phragmites invasions also increase the potential for marsh fires during the winter when the above ground portions of the plant die and dry out (Reimer 1973). Dense congregations of redwing blackbirds, which nest in Phragmites stands preferentially, increase chances of airplane accidents nearby. The monitoring and control of mosquito breeding is nearly impossible in dense Phragmites stands (Hellings and Gallagher 1992). In addition, Phragmites invasions can also have adverse aesthetic impacts. In Boston's Back Bay Fens, dense stands have obscured vistas intended by the park's designer, Frederick Law Olmstead (Penko, pers. comm. 1993).

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MEMORANDUM

DATE: June 6, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Meeting Notice and Information

NOTE THE MEETING LOCATION!

The next CAC meeting is confirmed for:

Tuesday, June 13, 2000
6:00 p.m. – 8:30 p.m.

Northeastern University
Egan Engineering /Science Research Center
Forsyth Street (next to Ruggles Station)
Raytheon Amphitheater — Room 240

Agenda Topic: Habitat Improvement and Rare Species

Enclosures:

1. Meeting Summary, CAC Meeting of May 16, 2000.
   Please review. Submit written comments within 7 calendar days John Burckardt by fax(617-635-3256) or e-mail (jburckardt@ci.boston.ma.us) The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.

2. Revised Index Sheet for CAC Workbook

3. "Read-ahead" Information on Wildlife Habitat Evaluation
   Please review prior to the meeting.
   Please add under Tab No. 9 of your CAC Workbook

Emerald Necklace Citizen's Advisory Committee

Egan Research Center, Northeastern University
Room 240 – Raytheon Amphitheater

Tuesday, June 13, 2000
6:00p.m. - 8:30p.m

Agenda

I. **Welcome & Comments Received**

***Fredie Kay**, MA Office of Dispute Resolution, CAC Facilitator*

***John Burckardt**, Project Manager*

II. **Project Update**

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

III. **Presentation: Wildlife Habitat Characteristics**

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

Paul Lelito, Principal
LEC Environmental Consultants, Inc.

Q&A/Discussion with CAC

IV. **Questions and Answers (General Public) Wrap Up**

25

LEC

AN ENVIRONMENTAL SYSTEMS COLLABORATIVE

MEMORANDUM

DATE: June 1, 2000

TO: CAC Members

FROM: LEC Environmental Consultants, Inc. ABR.

RE: Emerald Necklace Wildlife Habitat Evaluation

PROJECT #: COB/9213.01

LEC Environmental Consultants, Inc. in conjunction with Camp Dresser and McKee, Inc., have conducted a Wildlife Habitat Evaluation along the Emerald Necklace consistent with the guidelines set forth by the *Massachusetts Wetlands Protection Act* Regulations 310 CMR 10.60. LEC traversed each habitat type in its entirety and the surrounding periphery on foot. Data were collected on the vegetative communities and geological features, with emphasis given to wildlife habitat value. Identification of vegetation included assessing the structural heterogeneity of the plant communities, i.e. the canopy, shrub, and groundcover layers, with special consideration given to the presence of snags, cavities, burrows, basking sites, and other outstanding features. The Emerald Necklace was broken down according to habitat cover type, including forested mature tree canopy with shrub understory and emergent wetland, and habitat value was correspondingly assessed from that standpoint. Specifically, the abundance and diversity of all animals observed (by sight and/or vocalization) during the assessment were recorded along with any other evidence of habitat use including tracks, scat, feathers, bone fragments, and browse marks. Wind speed, temperature, cloud cover, wildlife vocalization, and general habitat structure and composition were noted.

Observations from this Wildlife Habitat Evaluation revealed that the majority of wildlife habitat along the Muddy River is an artificially created one that is continually and unabatedly affected by man's activities. This results in a less desirable environment that what could potentially be present in this area. The goal of the vegetation and habitat management section of this project is to create an environment vegetated with indigenous species that will in turn create more continuos, usable wildlife habitat along the Emerald Necklace. Presently, the wildlife habitat is fragmented and comprised of a variety of exotic and indigenous species. The habitat restoration of the Muddy River will be focused on the enhancement of wildlife habitat by using a diverse plant community resulting in correspondingly wildlife populations.

The description of these areas will be mainly visual photographs. As preparation for the CAC meeting, members should be familiar with the following terms, which are definitions of resource areas from the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40) implementing Regulations (310 CMR 10.00).

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LEC Environmental
Consultants, Inc.

7 Kimball Lane
Lynnfield, MA 01940
781 245-2500
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3 Otis Park Drive
Bourne, MA 02532
508 759-0050
508 759-0013 Fax
E-Mail: lecenv@tiac.net

Land Under Water Bodies and Waterways

Per 10.56(2), Land Under Water Bodies and Waterways is the land beneath any creek, river, stream, pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock.

Bordering Land Subject to Flooding

Per 10.57(2), Bordering Land Subject to Flooding is an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland.

Bank

Per 10.54(2), A Bank is the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, it occurs between a water body and an upland.

Bordering Vegetated Wetland

Per 10.55(2), Bordering Vegetated wetlands are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground and surface water regime and the vegetational community which occur in each type of freshwater wetland are specified in M.G.L. c. 131, 40.

Camp Dresser & McKee Inc.

Muddy River Restoration Project

Wildlife Habitat Characteristics

June 13, 2000

Bruce Conklin PE, CDM
Paul Lelito, LEC Environmental Inc

Meeting Objective

- Obtain CAC views on suggested habitat improvement concepts to guide development of habitat improvement program by river segment
- Through specific examples, will begin discussions on interrelationship between habitat improvement and historical treatment which will be continued at next meeting

Presentation Outline

- Regulatory aspects of habitat changes
- Historic aspects of habitat changes
- Habitat conditions, value, and opportunities
- Review enhancement objectives and project alternatives
- Potential changes to habitat
- Discussion of habitat issues

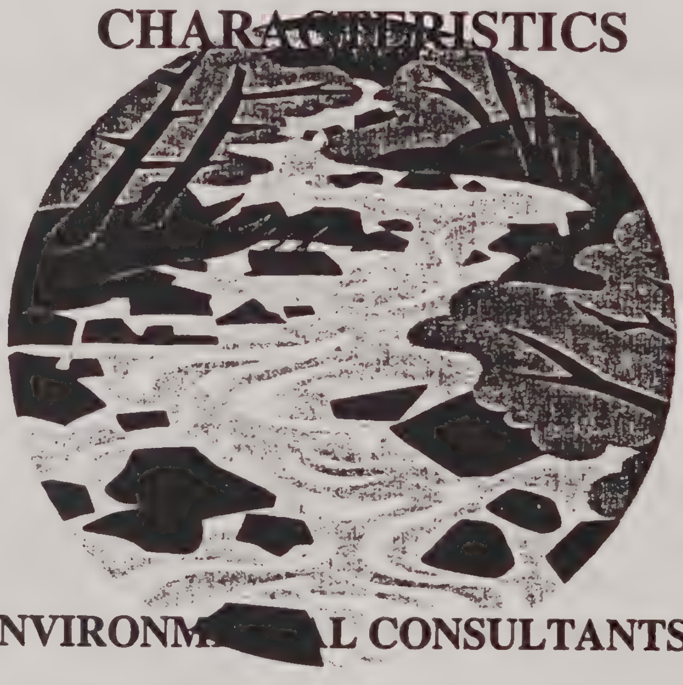
Regulatory Controls

- Limited project under Wetlands Act
- Flood channel
    - One of eight interest areas under 310CMR10.01
- Habitat improvements
    - One of eight interest areas, subject to 310CMR10.53 - "improve the natural capacity of a reasource..."

Historic Aspects

- Project objective to follow Secretary of the Interior Standards with Guidelines for the Treatment of Cultural Landscapes
- Changes must be consistent with historic protection guidelines (Interiors Standards, Sect. 106 and Local Landmarks)

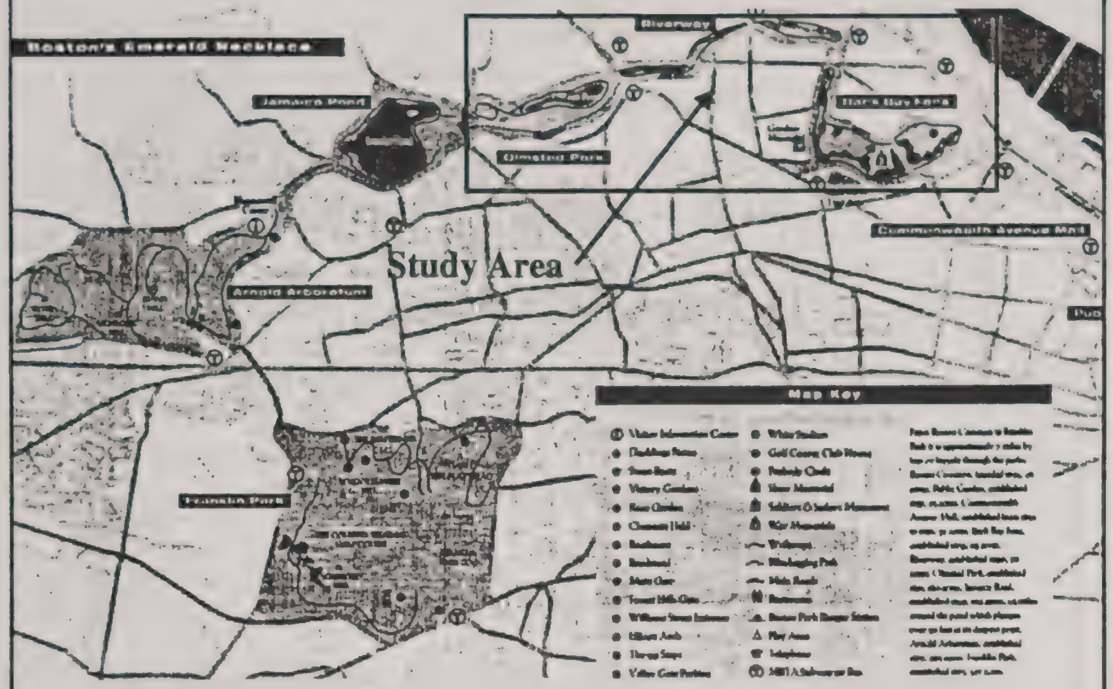
WILDLIFE HABITAT CHARACTERISTICS



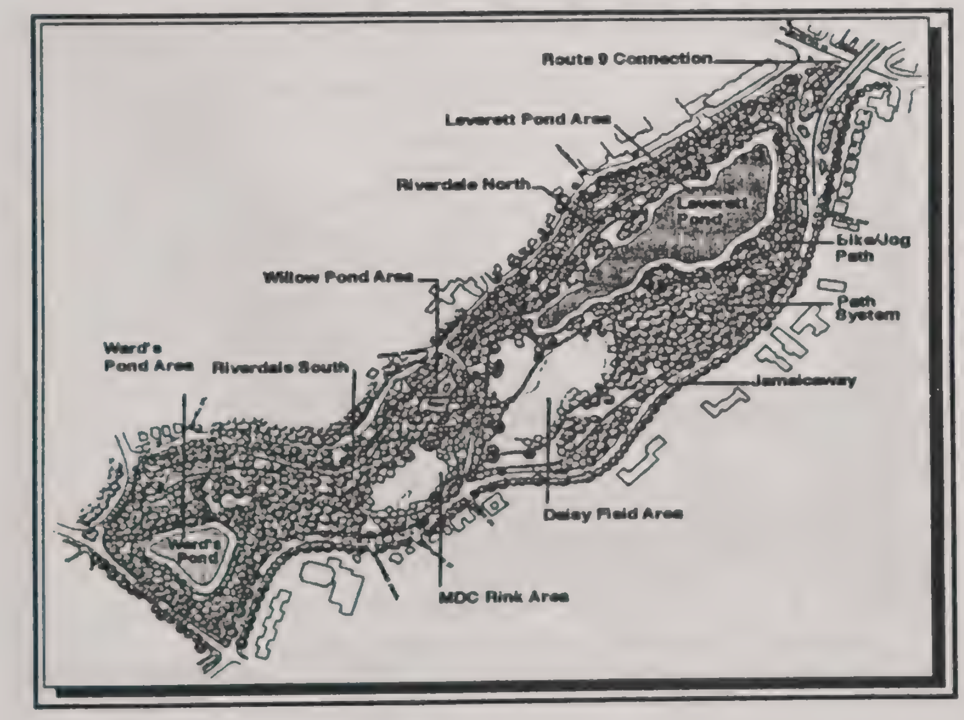
LEC ENVIRONMENTAL CONSULTANTS, INC.

CAMP DRESSER AND McKEE, INC.

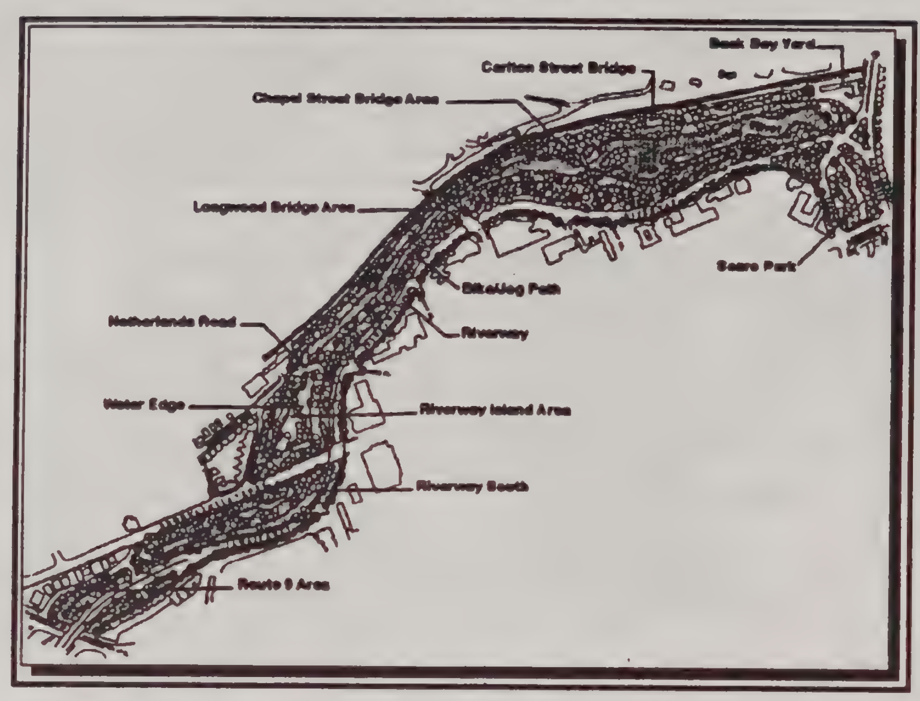
BIRD'S EYE VIEW OF BOSTON PARK SYSTEM



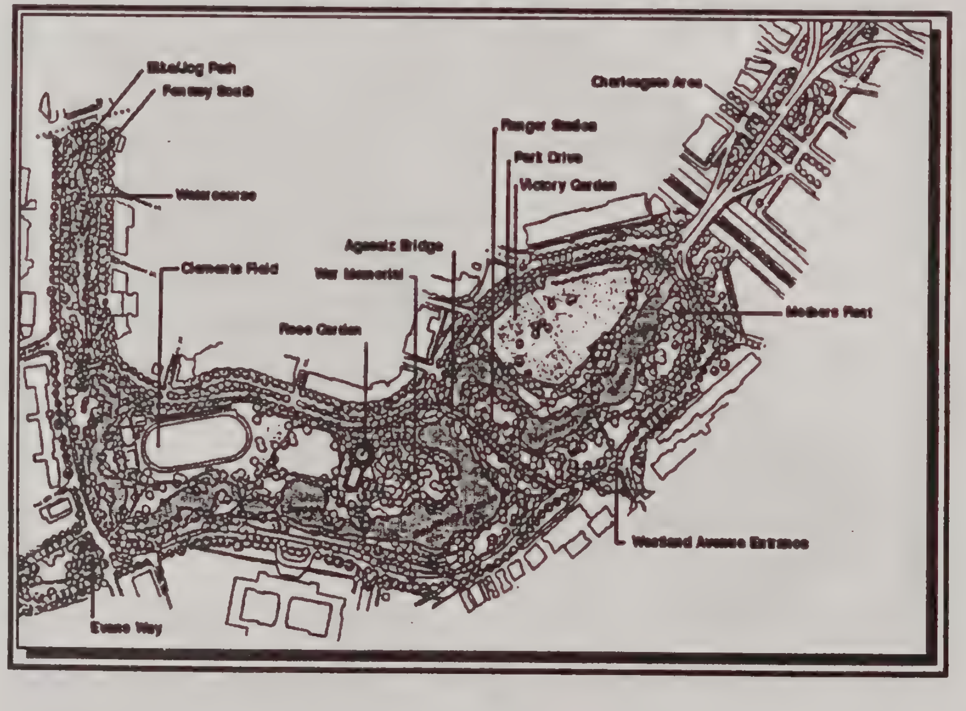
OLMSTED PARK



THE RIVERWAY



BACK BAY FENS



Project Objectives

- Improve water quality
- Enhance aquatic / riparian habitat
- Restore landscape and historic resources

Project Objective:
Improve Water Quality (1 of 2)

Alternatives:

- No Action
- Dredging
  - Reduces heavy metals and organic compounds in sediments
  - Reduces oxygen demand and nutrient recycling
- Point Source Control
  - Eliminate illegal sewer connections

    Reduces coliform, nutrients and solids; increases dissolved oxygen
  - Sewer separation

    Reduces coliform, nutrients and solids; increases dissolved oxygen

Project Objective:
Improve Water Quality (2 of 2)

- **Implement Best Management Practices (non-point source control)**
  - **Reduces suspended solids loading and floatables**
  - **Reduce discharges of runoff contaminants**
  - **Increases dissolved oxygen**
- **Flow Augmentation** *(Charles River, Stony Brook, Jamacia Pond, Chestnut Hill, Brookline Reservoirs)*
  - **Increases dissolved oxygen**
- **In-Stream Aeration** *(Review Suitable Technologies)*
  - **Increases dissolved oxygen**
- **Off-Stream Aeration** *(Review Suitable Technologies)*
  - **Increases dissolved oxygen**
- *Harvesting Aquatic Vegetation*

Project Objective:
Enhance Aquatic/Riparian Habitat (1 of 2)

Alternatives:

- **No Action**
- **Dredging**
  - **Reduces bio-accumulation in endemic species**
  - **Increases aquatic/riparian habitat**
- **Point Source Control**
  - **Reduces coliform, nutrients and solids; increases dissolved oxygen**
- **Implement Best Management Practices (non-point source control)**
  - **Reduces suspended solids loading and discharges of runoff contaminants improving aquatic habitat**
  - **Increases dissolved oxygen**

Project Objective:
Enhance Aquatic/Riparian Habitat (2 of 2)

- Flow Augmentation
  - Increases dissolved oxygen improving aquatic habitat
- In-Stream Aeration *(Review Suitable Technologies)*
  - Increases dissolved oxygen improving aquatic habitat
- Off-Stream Aeration *(Review Suitable Technologies)*
  - Increases dissolved oxygen improving aquatic habitat
- Remove non-native invasive species
  - Increases bio-diversity
- Plant Wetland and Riparian Vegetation
  - Increases species bio-diversity, habitat and edge effect
- Restore historic islands
  - Protects riparian habitat

Project Objective:
Treatment of Landscaping and Historic Resources (1 of 2)

Alternatives:

- No Action
- Develop a Treatment Planting Plan to respect the Emerald Necklace Master Plan, 1990 ("the continuum")
  - Develop a historic landscape treatment plan
  - Fully dredge the Muddy River and thereby restoring the historic drainage capacity
  - Remove non-native invasive species
  - Daylight and restore the culverted section at Avenue de Louis Pasteur and former Sears parking lot
  - Restore the historic islands in the Muddy River

Project Objective:

Treatment of Landscaping and Historic Resources (2 of 2)

  - Restore the island and banks at Avenue de Louis Pasteur to the Olmsted design
  - Enhance wetland and riparian habitat using as much of the Olmsted species list as possible
- Develop a Treatment Planting Plan to respect the Primary and Secondary periods of significance of the Parks
  - Same as above with the following exception
  - Enhance wetland and riparian habitat species from the Olmsted list for the Muddy River

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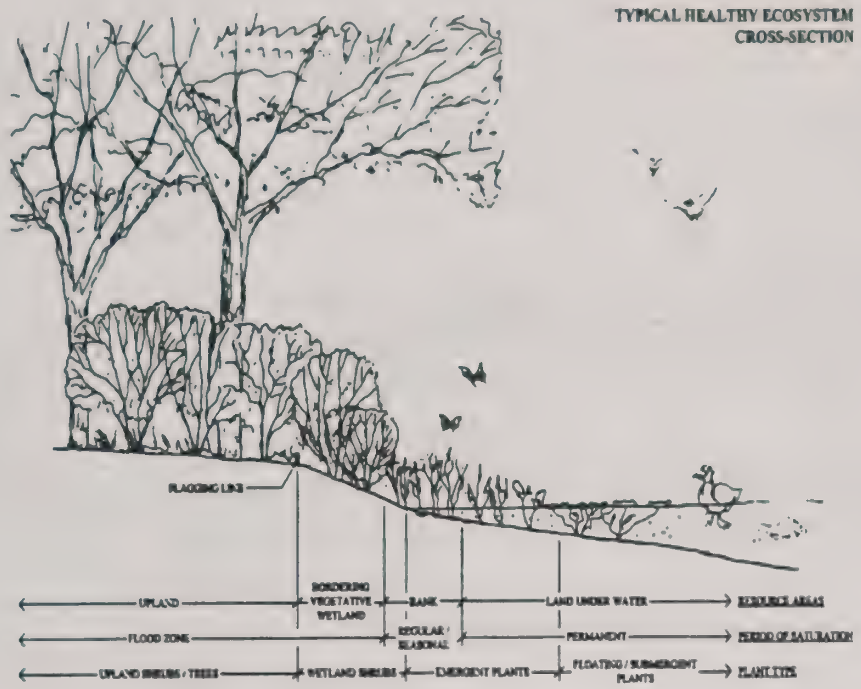
Potential Habitat Improvements

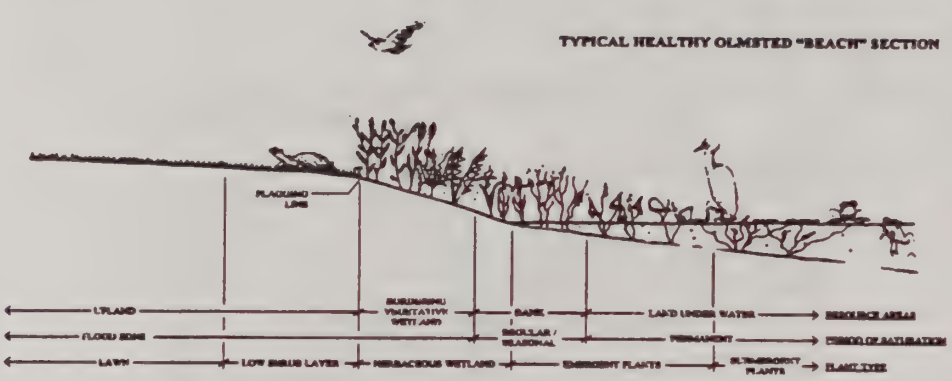
- Where resource areas are not primarily invasive species - preserve where possible
- Where resource areas are primarily invasive species - replace invasive species with wetland species and add adjacent upland vegetation



Potential Habitat Changes (con't)

- Bank areas - stabilize "beach" areas or add plantings

Definition of a "beach" area is an Olmsted term for a segment open to visual access to river



Discussion

- Objectives
  - Obtain CAC views on suggested habitat improvement concepts to guide development of the habitat improvement program by river segment
  - Through specific examples, will begin discussions on interrelationship between habitat improvement and historical treatment which will be continued at next meeting

Discussion (con't)

- Questions
  - What is the CAC's view of the consultants' conclusion that in order to enhance habitat the biodiversity of the plant community must be increased?
  - What is the CAC's view of the consultants conclusion that removal of invasive monoculture species is a significant component of increasing biodivesity of plant species?

Questions and Answers

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – June 13, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I **Welcome & Comments Received**

Fredie Kay, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II **Project Update**
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

III **Presentation: Wildlife Habitat Characteristics**
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

Paul Lelito, President
LEC Environmental Consultants, Inc. (LEC)

Q&A with CAC

VI **Questions and Answers (General Public) Wrap Up**

Summary

I Welcome & Comments Received

Fredie Kay opened the meeting and reminded CAC members to please contact John Burckardt and let him know if they will not be able to attend a specific meeting(s).

John Burckardt provided an informational handout regarding invasive plants along with the meeting agenda. Mr. Burckardt noted that he attended the Seminar on Invasive Wetland Plants, which was sponsored by the New England Chapter, Society of Wetland Scientists. Mr. Burckardt reminded all present to complete the Sign-In sheet.

Mr. Burckardt noted that Kate Bowtdich intends to submit a letter to all CAC members prior to her departure for Africa. He then noted that CAC members, Ms.Bowditch and Pamela DiBona would be replaced by Adam Cahn, a member on the Brookline Conservation Commission and Mary Crain Penniman from the Charles River Watershed.

II Project Update

Bruce Conklin provided a brief project update summarizing the major activities the CDM team has been working on since the last CAC meeting on May 16, 2000. Specifically, Mr. Conklin updated progress on the project as follows:

- Submitted Request for Determination of Applicability to Brookline and Boston Conservation Commissions for sediment and soil borings
- Completed the draft survey for the Riverway area
- Completed water quality and sediment monitoring plans
- Review of water quality and sediment monitoring plans with regulatory authorities
- Conducted site visit with dredging specialists as part of the evaluation for dredging and staging options in the Muddy River
- Identified potential staging areas (these will be reviewed for suitability with respect to various criteria, including construction issues, historic landscape considerations, traffic, park usage, aesthetics, etc.)
- Received draft of land survey

Mr. Conklin added that, during the remainder of June, the CDM team will conduct sediment sampling; evaluate the historical aspects of potential staging areas; and conduct hydraulic modeling of flood improvements.

Mr. Conklin then distributed a handout which included a list of upcoming CAC meetings with summary descriptions of each meeting. He noted that an additional CAC meeting on Alternatives is proposed for October 30, 2000, to discuss the analysis of BMPs. Mr. Conklin also noted that materials in support of the July 17, 2000 CAC meeting will be compiled and distributed to the CAC.

III Presentation: Wildlife Habitat Characteristics

A copy of the presentation made by the CDM team is included as Attachment 2.

Mr. Conklin began the presentation and emphasized that the purpose of the presentation was to:

- Obtain CAC views on suggested habitat improvement concepts to guide development of habitat improvement program by river segment,

- Begin discussions on the interrelationship between habitat improvement and historical treatment, which will be continued at the next meeting.

Mr. Conklin referred to Marion Pressley's involvement in the conceptual plan for the Muddy River. He stressed the importance of the CAC member's views on the wildlife habitat improvement.

Mr. Conklin then discussed the regulatory aspects of the project and referred to the different resource areas (*i.e.,* Land Under Water Bodies and Waterways, Bordering Land Subject to Flooding, Bank, and Bordering Vegetated Wetland [BVW]) summarized in a memorandum from LEC Consultants, Inc dated June 1, 2000. This memorandum was distributed to the CAC by mail along with the meeting notice. Mr. Conklin explained how the project would be filed as a Limited Project under the Wetlands Act. In order for the DEP to accept this filing, the CDM project team must demonstrate improved resource capacity for two of the eight interests covered in the Act, which relate to the project, specifically, flood control and habitat improvements.

From historical perspective, project changes must follow the Secretary of the Interior Standards with Guidelines for Treatment of Cultural Landscapes. Any changes, as part of the project must be consistent with historic protection guidelines set forth in the Interiors Standards, Section 106 and the local Landmarks Commissions.

Mr. Conklin then introduced Paul Lelito. Mr. Lelito is the founder and President of LEC Environmental Consultants. He has 20 years experience in identifying wetland resource areas and their functions. He is a certified wetland scientist and President of Association of Massachusetts Wetland Scientists.

Mr. Lelito began his presentation with a discussion of his goal, which included establishing baseline data on the wildlife habitat and current wildlife use along the Emerald Necklace. He noted that the baseline data included observation of mammals, avian species, fish, amphibians and reptiles, as well as vegetative characteristics. Each link along the Emerald Necklace was assessed for wildlife habitat, *(i.e.,* Olmsted Park, the Riverway, and the Back Bay Fens). Vegetation was identified with emphasis on structural heterogeneity of the plant communities, that is, ground (herbacious), shrub, and tree canopy cover.

As part of his discussion, Mr. Lelito stated the highest density of species observed along the Emerald Necklace may be classified as Urban Wildlife. Examples of urban wildlife are adaptable species that can tolerate a high amount of stress in their environment (e.g., English sparrow, grackle, crow, Canada geese, pigeons, and starlings).

The following is a summary of Mr. Lelito's observations and conclusions of each link evaluated along the Emerald Necklace.

Olmsted Park

In general, this area may be considered one of the more desirable areas for wildlife along the Emerald Necklace, specifically because of the diversity of habitats present and the isolated and protected nature of the BVW feeding Spring Pond.

- The emergent wetlands, sapling layer and tree canopy layer observed at Ward's Pond produced a viable ecosystem. The dense shrub layer provides a wonderful habitat for avian species.

- The area of discharge of Ward's Pond into Babbling Brook (man made) is densely vegetated. This provides temperature control, which is important to maintain oxygen levels in the system.

- Spring Pond, which was created by Olmsted as one of the historical pools and has a well-developed ground, shrub and canopy layer. Three Spined Stickleback (classified as a "threatened species") were observed in this area down to the inlet of Willow Pond.

- Willow Pond contains a great amount of sediment build up due to stormwater runoff. Monoculture species were observed along the banks

- Rivulets caused by the transport of stormwater and fecal material from geese were observed on the exposed soils and banks at Leverett Pond.

- Olmsted Island provides a desirable ecosystem in itself.

The Riverway

For the most part, this area is shaded by a mature tree canopy, which provides a high habitat value. However the bank vegetation is either non-existent, which leads to a high degree of bank destabilization and erosion, or primarily colonized by invasive species such as the Japanese knotweed (along the shoreline) and/or *Phragmites* (as emergent vegetation in the watercourse).

- The areas primarily occupied by the invasive species do not provide food to indigenous species and only provide limited escape cover and nesting sites as shown on Mr. Lelito's slide show.

- Mr. Lelito concluded that the introduction of shrubs along this area would stabilize the bank. The mucky area between the water's edge and the bank could provide an area where emergent species could be introduced as well.

The Back Bay Fens

Dominant vegetation along this segment of the river generally consists of *Phragmites Australis*, a monotypic emergent aquatic species that is not indigenous to this area. Mr. Lelilto noted that *Phragmites* is known to invade degraded habitats and outcompete indigenous plant species, thereby reducing animal species diversity in the invaded area. *Phragmites* does provide limited cover for certain urban wildlife but is not suitable as a food source, nor does it provide nesting and breeding habitat.

- Mr. Lelito noted that good habitat along the terrestrial environment provides good aquatic diversity as well.

- Mr. Lelito noted that the dominant monocultures, lawn and purple loosestrife, proliferate urban wildlife resulting in low diversity.

- Mr. Lelito explained that *Phragmites* may provide escape cover for urban wildlife. However, if other vegetative species occupied the same area, it would be utilized as habitat by urban wildlife as well as other wildlife.

Discussion

Following this portion of the presentation by Mr. Lelito there was discussion, questions and comments that are presented below.

- Some of the CAC members wondered how the introduction of indigenous species would result in a cleaner habitat and how the whole concept relates to cleaner water. Mr. Lelito indicated that stabilizing the banks would prevent sediment transport into the waterways, which would decrease turbidity and potentially allow for an increase in primary productivity that could temper nutrient loading.

- A CAC member asked if the invasive species such as the purple loosestrife, *Phragmites*, and Japanese knotweed were part of the original Olmsted plan. Mr. Lelito replied that glossy buckthorn (Rhamnus frangula) was indeed part of the Olmsted plan, however, *Phragmites* and purple loosestrife most likely were not intentionally planted. It is unclear whether Olmsted planted Japanese knotweed. It was not on Olmsted's planting list. However, knotweed is seen in historic photographs, and it has been speculated that knotweed was planted along the banks in the Riverway at some point in time.

- A CAC member asked if the consultants could provide a more detailed description of the kinds of plants that would be beneficial to achieve a healthy ecosystem. Mr. Conklin noted that two diagrams are provided in the presentation handout showing typical sections of a healthy ecosystem. Mr. Lelito then stated that the periphery of Ward's Pond could be an example of a healthy system with the exception of an area containing exposed soils. A typical healthy system would consist of the following: species such as water willows might occupy the emergent zone. Moving shoreward, plants such as jewelweed, cinnamon fern, partridgeberry and wintergreen might occupy the ground cover. Highbush blueberry and winterberry, which provide good food source at the fruiting stages, might dominate the shrub layer. Also occupying the shrub layer might be speckled alder, which warblers like to inhabit. Then finally at the sapling and tree canopy, layer red maple, sweet gum, swamp white oak, and tupelo are all examples of strong trees that provide food sources in the winter.

- The CAC members expressed their concern regarding how the various ecosystems along the Emerald Necklace, which differ so greatly, would be united. Mr. Lelito indicated that different plants prefer different microclimates and that specific indigenous species would be targeted for specific environments along the Muddy River. He explained that the strip along the Fens with an enormous amount of *Phragmites* for example could be replaced with a shrub, sapling and tree canopy layer in order to bring wildlife diversity into the area.

- A CAC member asked for clarification regarding temperature control. Mr. Lelito responded that the lower the temperature of water the greater the capacity water has to hold oxygen. Species within the ecosystem use this oxygen to keep the system alive. Mr. Lelito noted that shading from vegetation can maintain lower water temperature.

- Some CAC members expressed their concern regarding control of invasive species. Mr. Lelito noted that one of the purposes for this meeting was to share his conclusions with the CAC that the invasive species need to be replace with a habitat with more structural heterogeneity, and to learn the CAC's views on that issue. He stated that methods that have been used to control invasive species include: routine cutting; dredging; chemical applications in particular areas; and black plastic (he noted that he would not recommend this method for this project as it is costly but not effective). Mr. Conklin commented that control strategies would be incorporated into a maintenance plan to be discussed at the November meeting.

- There was a discussion of Canada geese occupying large areas of the Emerald Necklace, primarily Leverett Pond and contributing to the problem of fecal material being washed into the waterway. It was recommended that signage needs to be posted to prevent the public from feeding the ducks. Vegetation along the water's edge could deter geese from "beaching" or coming onto the shore.

- There was discussion regarding the two cross section diagrams showing the typical healthy ecosystems for habitat improvement. Specifically, resource areas that are not primarily occupied by invasive species would be preserved where possible; and resource areas that are primarily occupied by invasive species would be replaced with wetland species and adjacent upland vegetation would be added as well. Mr. Conklin noted that Marion Pressely would provide advice in how the potential habitat improvements relate to the historic aspects of the area at the next meeting.

  Some CAC members expressed concern regarding the definition of Olmsted's "beach" and what degree of accessibility to the waterway (public's access to the waters edge) should be provided. One interpretation of "beach" is a view corridor to the water, which may include low planting just upland of the water's edge. The other interpretation of "beach" would be uninterrupted access to the water's edge without obstruction by plantings (for example, a lawn that met the water's edge). Two examples of the latter discussed at the meeting included Atlanta and Prospect Park. The design consultants agreed to develop a third cross section with uninterrupted access to the water's edge and to consider where this type of access to the river might be applicable in the Emerald Necklace.

- A CAC member expressed an interest in providing river access to accommodate those who fish in the Muddy River. It was suggested that the third section (described above) be developed that includes access to the water's edge.

- A CAC member expressed some concern for the aquatic habitat improvement. Mr. Conklin noted that aquatic habitat improvement would principally be addressed by improving water quality. As part of the Alternative Analysis the CDM team would run the flow augmentation model but water sampling will eventually show what type of environment we are dealing with. This issue will need to be discussed further once the water quality is determined.

Fredie Kay then asked the CAC to address the following questions:

- What is the CAC' s view of the consultants' conclusion that in order to enhance habitat the biodiversity of the plant community must be increased?

- What is the CAC's view of the consultants' conclusion that removal of invasive monoculture species is a significant component of increasing biodiversity of plant species?

One of the CAC members said that she recognizes this project as an opportunity to aggressively address the removal of invasive species, however this discussion would need to be carried into the next meeting regarding historic aspects of the Emerald Necklace when historic research information could be reviewed.

One of the CAC members commented that dredging would not be the only solution to remove invasive species from the park and noted that the invasive species have destroyed the historic value of the park.

In general the CAC gave support that there is a need to increase biodiversity in the park including replacement of invasive species. However, the CAC would prefer to understand the application of the proposed habitat improvement cross sections in conjunction with the proposals for the historical treatment of the park. Thus, the CAC agreed to revisit the questions posed after the Historical Resources Evaluation meeting.

VI Questions and Answers (General Public) Wrap Up

Members of the general public attending the meeting were offered an opportunity to ask questions or comment, but none chose to do so.

One of the CAC members noted that the Green Space Alliance would be holding a meeting on Tuesday, June 27th at 4PM at the Egan Center at Northeastern University (same location as the CAC meeting). Professor Kathy Poole will present her computer-based model of the Back Bay Fens..

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for Monday, July 17, 2000. *[The location will be Room 450, Dodge Hall, Northeastern University]*. The meeting topic is Historic Resources Evaluation.

Enclosures:	Attachment 1 – Sign-In Sheet
	Attachment 2 – CDM Consultant Team Presentation

ATTACHMENT 1

Emerald Necklace Citizens Advisory Committee

Meeting No. 6

June 13, 2000

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Bimbaum	National Park Service	
		Brookline Conservation Commission	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	Christine Cooper
Edward	Cutler	Brookline Resident	Ed Cutler
		Charles River Watershed Association	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	Al Good
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath	Franklin Park	Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	

Emerald Necklace Citizens Advisory Committee

Meeting No. 6

June 13, 2000

Sign-In She

Name		Affiliation	Signature
Frances J.	Kemp	Friends of the Muddy River	Frances J. Kemp
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	Arleyn S. Levee
John A.	Martin	Emerald Necklace Conservancy	John A. Martin
Hugh	Mattison	Friends of Leverett Pond	
Lauren	Meier		Lauren M. Meier
Paul	Mentag	Fenway Alliance	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	M. Sabal
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Emerald Necklace Citizens Advisory Committee

Meeting No. 6

June 13, 2000

Sign-In Sheet

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Name	Affiliation/Address	Phone	E-mail
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John Burckardt	PBOD	635-4505	jburckardt@ci.boston.ma.us
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Maureen Twombly	Northeastern Unive	373-2340	mtwombly@lynx.neu
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Mark P. Smith	EOEA	617 626-1050	
Beth Ann Wild	MODR		
Bob McDonnell	N.U. 26 Tavern Rd	373-5330	N.U.

Emerald Necklace Citizens Advisory Committee

Meeting No. 6

June 13, 2000

Sign-In Shee

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Name	Affiliation/Address	Phone	E-mail
Erin Chute	Brookline Conservation	730-2088	
Pe M. Ditto	BROOKLINE DPW	730-2138	

Town of Brookline
Conservation Commission

Stephen Burrington, Esq., Chair
Ioanna Wexler, Vice-Chair
Werner Lohe, Esq., Clerk
Kate Bowditch
Adam Kahn
Roberta Schnoor
Elissa Tonkin

Associates
Keith Beasley, P.E.
Joan Fried, M.D.
Barbara Mackey
Marian Lazar

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street, 20th floor
Boston, MA 02202

June 14, 2000

Dear Secretary Durand,

I regret to inform you that I must resign my position on the Emerald Necklace Environmental Improvements Master Plan (the Plan) Citizens' Advisory Committee (CAC). I have thoroughly enjoyed my participation on the committee, and believe that the CAC is a critical component to developing the best plan for restoring and improving the Emerald Necklace. I am leaving the country until August, 2001, and so must pass on the responsibility of serving on the CAC to another member of the Brookline Conservation Commission.

Because of both my professional background and my personal commitment to the long-term success of this project, I would like to pass on some thoughts and suggestions. As the project moves forward through field analyses, planning, permitting and implementation, there will be both enormous challenges and opportunities. I hope my comments are of some use, both to you and to the CAC, as you move ahead in the process of evaluating alternatives and directing the project towards the best environmental outcomes.

Stormwater Management

Based on my experience as a watershed hydrologist at the Charles River Watershed Association, and a Conservation Commissioner for the town of Brookline, I believe the approach to stormwater management is one of the most important factors in the long-term success of the Muddy River Flood Control, Water Quality and Habitat Enhancement Project, Phase I of the overall Plan. Dredging will remove the vast quantities of contaminated sediments that have accumulated over the past decades in the Muddy River. These sediments contribute to water quality problems, reduce the flood-carrying capacity of the river, and accelerate the growth of invasive aquatic vegetation.

Dredging alone, however, is not a long-term solution. In an urban watershed as developed as that of the Muddy River, there must be a significant financial and institutional commitment to keeping new sediments, and their associated pollutants, from entering the river system. If stormwater management is not successful, the benefits of dredging will not be long-lived, as new sediments quickly begin to accumulate in the ponds and river channel.

The need to minimize the pollutants that enter the Muddy River, especially all the pollution carried in stormwater, has been widely acknowledged in all of the studies of the Muddy

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River. The challenge now that the restoration project has actually begun is to determine which methods, practices, and devices are the most appropriate to use. Both Boston and Brookline are involved in stormwater management, and have developed Stormwater Management Plans to address the first steps in stormwater management. The scale and significance of the Muddy River Project, however, dictates that an even higher level of stormwater control is needed for the areas that drain into the Muddy River.

The project evaluation currently underway by Camp, Dresser and McKee and Jason M. Cortell and Associates, consultants to the project proponents, continues to work on developing materials to help answer these, as well as many other, questions. As I discussed at my last CAC meeting, I believe that in order to determine the best, most cost-effective stormwater management practices and devices for the Muddy River, the project proponents, your staff and the CAC need to consider all possible solutions. These will range from very large end-of-pipe devices to small catch-basin devices, and will include both structural and non-structural approaches. Some of the alternatives that should be considered (starting at the end of the pipe and moving "upstream" in the stormdrain system) include:

- Sediment forebays (small pools or impoundments at the end of pipes that allow sediments to settle out before the water runs out into the main water body). These can be constructed in existing water bodies, or can be built into banks; they should be easy to access with maintenance equipment, and should have approved management plans in place.
- Sediment chambers, particle separators, or other buried sediment capturing devices. These large and fairly costly devices are typically constructed at the end of pipes, or at the end of a trunk line that feeds into a larger pipe, and filter out large and mid-sized particles from stormwater. To be effective, they need to be inspected and cleaned out regularly. Access is typically via manhole.
- Catch basin improvements. Typical catch basins, which collect stormwater as it flows off the street, rely on deep sumps for sediment and trash removal, and in some cases "hooded" outlets to minimize oil and grease pollution from entering the stormdrain pipes. These need to be cleaned out regularly to maintain their effectiveness. But even with regular maintenance, the effectiveness of catch basins can be improved by the addition of filter fabrics or other devices. A regular, public record of catch basin inspection and cleaning, as well as estimates of sediment removal, should be a component of a stormwater management program.
- Improved street sweeping practices. Both Boston and Brookline have made efforts recently to improve street sweeping effectiveness, by increasing the frequency of sweeping, and by upgrading the equipment. These changes could be augmented by seasonal modifications, with dry-weather sweeping continued in winter, and much more intense sweeping in spring, even if this requires reducing sweeping during months when there is less material on the streets.
- Incentives for private property owners (public-private partnerships). Stormwater is non-point-source pollution, meaning it comes from everywhere. Municipalities have management responsibilities for only a fraction of the developed portion of the watershed. It is critical to improve stormwater management on private property, using such techniques as those described in DEP's stormwater guidance documents. These include increasing stormwater storage and infiltration on-site, minimizing pollution sources such as excessive fertilizer, herbicide and pesticide use, improving

management of sites during construction, encouraging the construction of grassed swales and tree planting, and maintaining green spaces. Incentive programs to help property owners, businesses and institutions retrofit their properties may be extremely cost effective stormwater management techniques.

- Demonstration Projects. Because watershed management is inherently large scale and difficult to implement and evaluate, Boston and Brookline should consider moving forward with demonstration projects at a small scale. Several sub-watersheds could be managed in different ways, with the effectiveness, costs, training and maintenance requirements tracked to determine the best "bang for the buck." Good preliminary stormwater management design options have already been examined for some of the sub-watersheds in the Muddy River by both the Center for Watershed Protection and the Massachusetts Community Assistance Partnership of the Natural Resources Conservation Service. These reports should be examined in the EIR. Similarly, several private institutions could volunteer to develop intensive stormwater management programs, and document their processes and results to help determine what types of public-private partnerships may succeed.

The costs of stormwater management, by whatever means, will indeed be large. Stormwater management costs can reach as much as 10 – 20% of a project's total costs. But stormwater management should not be considered merely an add-on, a secondary or supplemental component to the project. It is a critical, integral part of the project. The enormity of this project, and its necessary short-term environmental and social impacts, are justified by the multiple long-term benefits the project will provide to the unique historic, cultural and environmental treasure that is the Emerald Necklace. Those benefits will be lost if we don't keep this problem from happening again. Keeping pollutants out of the river is just as important as removing those that are already there.

Other Issues

USGS Precipitation, Flow and Flood Warning System. The USGS has installed flow and water quality monitoring devices in both the Stony Brook conduit and the Muddy River. Current funding for maintaining and running these is scheduled to expire at the end of 2000, and if more funding is not found, the equipment will be pulled out. Maintaining these stations should be a priority for anyone working to minimize flooding and improve conditions on the Muddy River. The cost of keeping these stations in place and operating is minimal compared to the importance of the information they provide (I gather about $20,000 per year). The stations not only provide accurate, up to the minute information about the amount of rainfall, and the flow in the river and the conduit (thus providing an early flood warning system), but also collect important water quality information that will help assess improvements during and after this project. Rich Thibideau at DEM has worked with USGS on the system and may be able to provide more information.

Alternative/Innovative Water Quality Improvements. As the project evaluates alternatives for water quality improvements, CDM should gather information on things such as the Living Machine technologies, or other *in-situ* water quality improvement devices. These have operated and been monitored for several years in lakes and ponds in several New England states. Because they are not permanent devices, they may be suitable for a historic resource area.

In addition, landscape design issues should take into account geese and other waterfowl. The ever-expanding goose population is a significant water quality and park maintenance problem. Geese contribute high levels of nutrients and bacteria to the water, and destroy grass, leaving bare, easily eroded soil exposed on the banks. While maintaining open vistas and access to the water is an essential component of the Olmsted design, mowed grass lawns sloping gradually to the water are ideal goose habitat. Many landscape design alternatives can minimize goose populations while still preserving the intent of the original design.

Finally, if and when the US Army Corps of Engineers' suggestion to increase flow in the system by recirculating water, or by augmenting flow from another source, is revisited, the possibility of pumping dry weather flows into the Muddy River from the Stony Brook conduit could be reexamined. USGS measurements indicate that dry weather water quality in the conduit is good, and that dry weather flow volumes are as much as 10 – 15 cfs. With BWSC's sewer separation program underway, water quality in the Stony Brook should continue to improve. And Stony Brook was after all once part of the Muddy River.

Once again, I thank you for the opportunity to have served on the CAC, and for your ongoing efforts to find the funding and support needed to move forward with efforts to restore this wonderful resource to the Commonwealth. Best of luck with the project, and with all of your work.

Sincerely,

Kate Bowditch

Kate Bowditch

cc:
Emerald Necklace CAC ✓
Brookline Conservation Commission
Tom DeMaio, Brookline DPW
Justine Liff, Boston Parks and Recreation Dept.
Laura Rome, MEPA
Mark Smith, EOEA
Mary Crane Penniman, CRWA
Betsy Shure-Gross, EOEA
Joseph Geller, Board of Selectmen Chair
Boston Conservation Commission

MEMORANDUM

DATE: July 10, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**; Other Information

NEW MEETING LOCATION!

Due to a scheduling conflict, the next CAC meeting location is changed to:

Monday, July 17, 2000
6:00 p.m. – 8:30 p.m.
Northeastern University
Dodge Hall, Room 450 (4th floor)
360 Huntington Avenue (off the main quadrangle, next to the YMCA and the Green Line Station)

~ ~ ~ ~ ~ ~ See Map on Back! ~ ~ ~ ~ ~ ~

Agenda Topic: Historic Resources

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

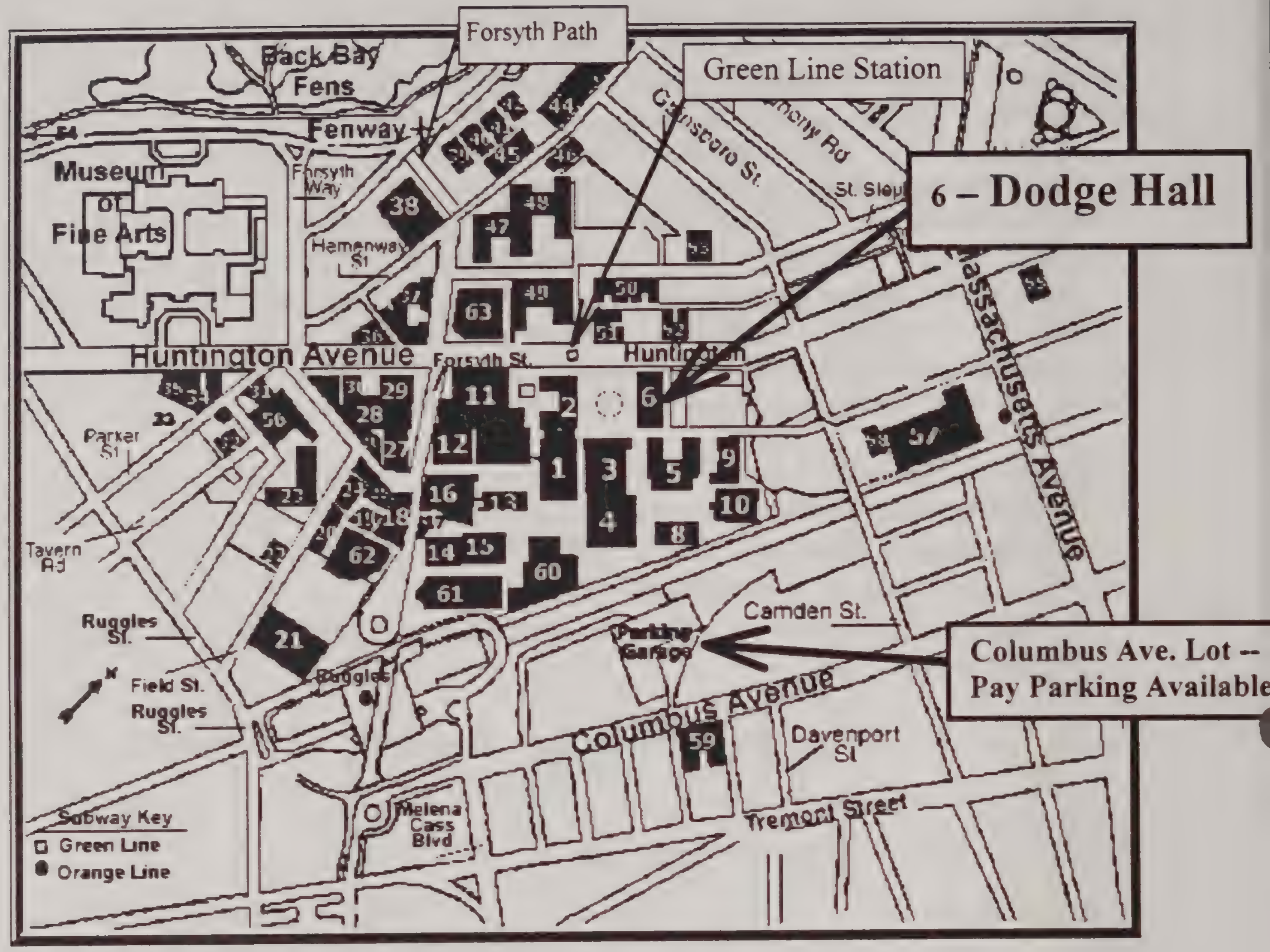
Other Attachments:

1. Revised Index Sheet for CAC Workbook
2. Definitions of Terms – Historic Landscape Treatment
3. Letter from Kate Bowditch
   The letter is being distributed at the request of Ms. Bowditch. It includes her comments on the topic of Best Management Practices (BMPs)
4. Meeting Summary, CAC Meeting of June 13, 2000.
   Please review. Submit written comments within 7 calendar days John Burckardt by fax (617-635-3256) or e-mail (jburckardt@ci.boston.ma.us) The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.

Directions to

Dodge Hall -- Room 450

NORTHEASTERN UNIVERSITY CAMPUS



From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to Huntington Avenue. Turn left on Huntington. Dodge Hall is on the main quad near the Green Line stop.

From Green Line (E Train):
Get off at Northeastern U. stop and walk across Huntington Avenue to the main quad. Dodge Hall is the building on the left as you enter the main quad.

From the Orange Line:
Exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

Read Ahead Material

Historic Landscape Resources

The Muddy River restoration will occur in the setting of an historic park. Any work in the park must take into consideration the regulatory requirements for historic parks. Policies, guidelines and standards are included in various publications by the National Parks Service (NPS) of the US Department of the Interior.

The attached information is from *A Guide to Cultural Landscape Reports.* It includes the Secretary of the Interior's Standards for the Treatment of Historic Properties and guidelines for evaluating treatment actions.

Historic Landscape Treatment Plan. A Treatment Plan describes in detail the way the historical documentation will be interpreted and used to create a buildable plan. Treatment Plans are developed in accordance with the Secretary of the Interior's Standards for Treatment of Historic Properties (1995), and the Guidelines for the Treatment of Historic Landscapes (1996). The National Park Service definitions for four treatments are included in the attached guide:

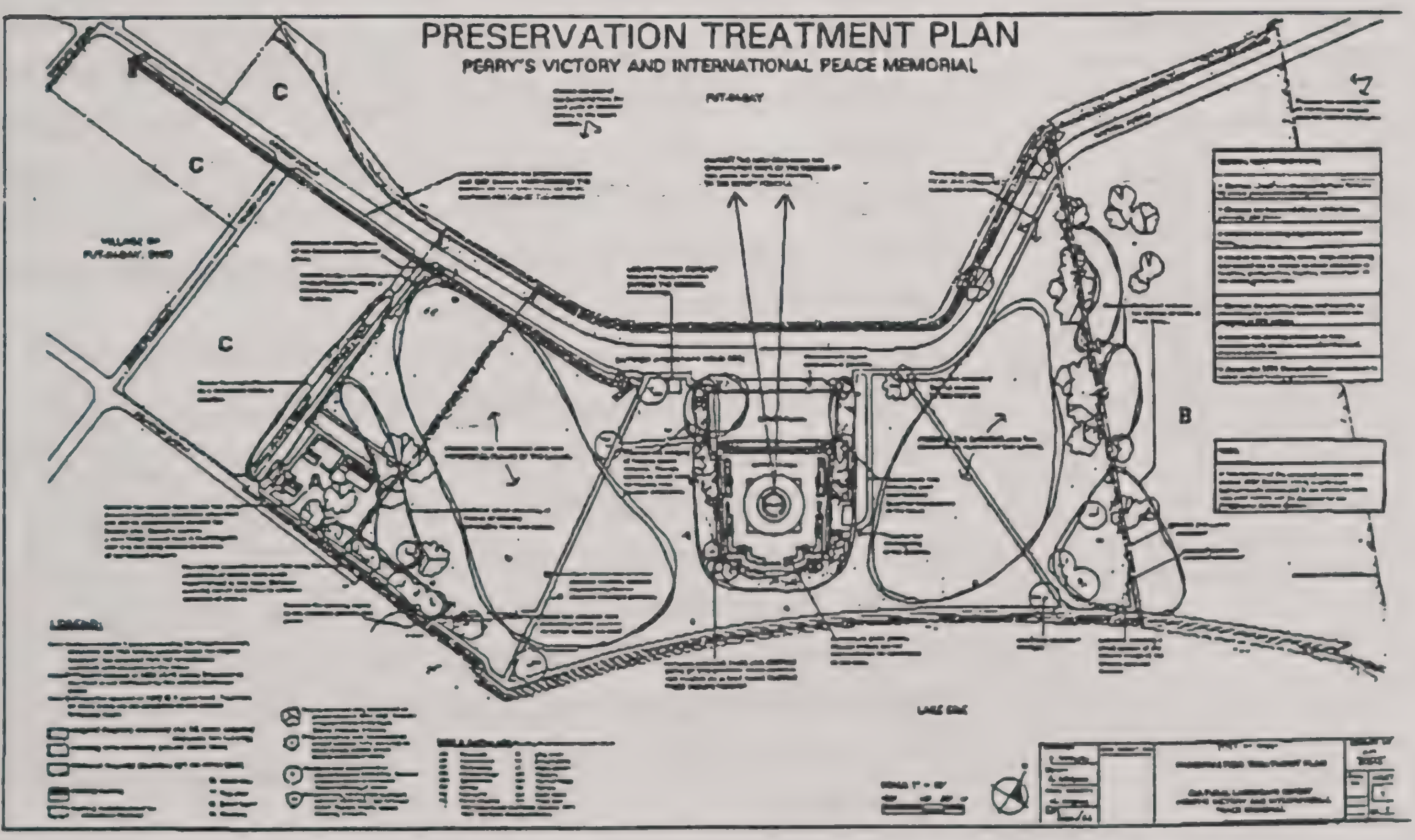
- Preservation
- Restoration
- Rehabilitation
- Reconstruction

CLR PART 2: TREATMENT

Part 2 is the treatment section of a Cultural Landscape Report (CLR). It articulates a preservation strategy for long-term management of a cultural landscape based on its significance, existing conditions, and use. (See Figure 40.) Part 2 considers management goals, such as public access, preservation of natural resources, contemporary use, and interpretation. Part 2 may address an entire landscape, a portion of a landscape, or a specific feature. The foundation for the preservation strategy is the historical research, existing conditions, and analysis and evaluation documentation contained in Part 1 of a CLR.

Part 2 must be prepared in collaboration with park management and staff to ensure that management goals are addressed and that the proposed treatment can be implemented and maintained over time. (See the section titled, "Maintenance and Sustainability" later in this guide.) The

Figure 40. A treatment plan specifi actions necessary for preservation landscape. Perry's Victory and International Peace Memorial. (NP 1994)


PRESERVATION TREATMENT PLAN
PERRY'S VICTORY AND INTERNATIONAL PEACE MEMORIAL
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content of Part 2 is prepared by a historical landscape architect working with other disciplines as needed. For example, a horticulturist may recommend disease-resistant cultivars to replace a particular historic plant; a historical architect may recommend stabilizing a structure in poor condition; or a natural resource specialist may prescribe methods to protect a threatened habitat.

POLICIES, GUIDELINES, AND STANDARDS

Treatment of a cultural resource must be guided by the policies, guidelines, and standards contained within *NPS Management Policies*, the *Cultural Resource Management Guideline*, and *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. These documents identify four types of treatment: preservation, rehabilitation, restoration, and reconstruction. (See the insert titled, "Treatment Definitions" on this page.)

Specific policies, guidelines, and standards exist for each of the four types of treatments. Collectively, the four treatments form the philosophical basis for responsible preservation practice and enable long-term preservation of a landscape's historic features, qualities, and materials. The four treatments allow for both traditional and contemporary treatment techniques while supporting continued use.

The goal of any treatment program is long-term preservation of a landscape's historic features, qualities, and materials. Generally, the amount of physical intervention in a landscape increases from preservation to reconstruction. Preservation attempts to maintain a landscape in its existing state. Rehabilitation recommends some change to accommodate contemporary use. Restoration often involves removing later additions and reconstructing missing features to depict a landscape at a particular time. Reconstruction replicates a nonsurviving landscape through new construction.

TREATMENT DEFINITIONS

Preservation: the act or process of applying measures necessary to sustain the existing form, integrity, and material of a historic property. Includes initial stabilization work, where necessary, as well as ongoing preservation maintenance and repair of historic materials and features.

Rehabilitation: the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Restoration: the act or process of accurately depicting the form, eatures, and character of a property as it appeared at a particular period of time by removing features from other periods in its history and reconstructing missing features from the estoration period.

Reconstruction: the act or process of depicting, by means of ew construction, the form, features, and detailing of a nonurviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a pecific period of time and in its istoric location.

(Excerpted from *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, 1995.)

As physical intervention increases, the policies, guidelines, and standards require more documentation and justification for treatment actions. (See the insert titled, "Secretary of the Interior's Standards for the Treatment of Historic Properties" later in this section, and *A Guide to Cultural Landscape Reports: Appendices,* "Appendix H: Treatment Policy, Guidelines, and Standards.")

DEFINING A MANAGEMENT PHILOSOPHY

When a CLR addresses an entire cultural landscape, it is appropriate to define a management philosophy for the landscape as a whole. This management philosophy guides long-term management and maintenance and provides a reference for future treatment decisions. The management philosophy consists of a narrative that clearly states the goals and objectives for managing the landscape as a cultural resource, including the intent of the primary treatment, specific considerations for long-term management, and general maintenance requirements. (See the section titled, "Defining a Primary Treatment" later in this section, and the insert titled, "Cant Ranch Historic District Management Philosophy" on the following page.)

DETERMINING TREATMENT

The General Management Plan (GMP) is the primary planning document for determining the general treatment of all cultural resources in a park based on cultural and natural resource inventories. However, many GMPs do not specifically address the treatment of cultural landscapes. As a result, specific treatment of the cultural landscape may be decided in the Site Development Plan (SDP). When treatment of a landscape has not been prescribed through the planning process, a CLR may augment or be combined with an SDP to determine a preferred treatment and physical design.

CANT RANCH HISTORIC DISTRICT MANAGEMENT PHILOSOPHY

The Cant Ranch Historic District is a valuable cultural resource within John Day Fossil Beds National Monument. Significant cultural landscape resources and values provide a range of options for management that are generally compatible with the proposed use of the site for NPS administration and visitor services as specified in the proposed Site Development Plan (SDP). Based on the cultural landscape evaluation, the character of the ranch ties most directly to the sheep ranch period from 1910 to 1946. Although the NPS has modified the landscape over the years to accommodate park operations and programmatic needs, key cultural landscape patterns, relationships, and individual features remain. Not all areas on the ranch exhibit the same type or degree of significance, so different management strategies are appropriate for specific areas within the district.

From an interpretive point of view, no attempt is made to "freeze" the cultural landscape of the Cant Ranch to a single date or period. What makes the ranch interesting and significant is the high degree of integrity to all three periods. Each historic period enforced the land use patterns and overall landscape organization of the previous era, providing a cultural landscape with a relatively high level of integrity. Design treatments and cultural landscape management focus on the integration and interpretation of features remaining from all significant historic periods as a way to enhance visitor understanding of the complexity and continuity of the site over nearly a century of use.

In addition, the landscape of Cant Ranch historically extended for miles beyond the physical boundaries of the existing 200-acre district, and the concept of designing for, or managing the landscape as a "working ranch" is not appropriate.

Finally, many historic ranching practices had an adverse impact on natural landscape features and systems. For example, allowing livestock unrestricted grazing along the John Day River eroded the river bank and compacted soils. No effort will be made to reestablish these practices just because they are historic. Rather, the philosophy for treating the cultural landscape will be to retain existing historic features and patterns. However, when considering reestablishment of nonextant features, such as fences, or rehabilitation of biotic cultural resources, such as the agricultural fields, a more integrated and sustainable approach to management will be encouraged.

(Excerpted from *Cultural Landscape Report: Cant Ranch Historic District, John Day Fossil Beds National Monument.*)

View of Cant Ranch Historic District, John Day Fossil Beds National Monument. (NPS, 1993)

Treatment decisions are based on many factors, including:

- Legislative and management factors
    - park-enabling legislation
    - policy, guidelines, and standards
    - park management objectives
    - proposed use (as defined in planning documents)
- Resource-based factors
    - historical integrity and significance
    - level of historical documentation
    - existing conditions
    - threats and resource conflicts
- Operational factors
    - health and safety
    - maintenance requirements
    - projected costs

The above factors, especially those pertaining to legislation and management, directly influence the project agreement for a CLR. In addition, they help define a preservation strategy for long-term management of a cultural landscape. (See the section titled, "Use of Cultural Landscape Reports in Park Planning and Design" earlier in this guide.)

Defining a Primary Treatment

Defining a primary treatment for a property is important because it ensures consistency in treatment activities. This is emphasized in *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. In selecting a primary treatment, each treatment action is evaluated on the basis of the landscape's value as a cultural resource. One goal of the primary treatment is to ensure that the historic features contained in the landscape actually existed together. A landscape's "period of significance" (defined through research) provides the best frame of reference for evaluating the congruity of treatment actions, especially those related to removal and reconstruction. A recommendation to remove or reconstruct a particular feature should be evaluated on the basis of whether the feature was present in the landscape at the end of the period of significance.

Because of the complexity of many cultural landscapes, the primary treatment often serves as a general treatment for the entire landscape. The primary treatment is defined by the overall level of intervention and change proposed for the landscape. Take, for example, the Eugene O'Neill National Historic Site. Here, restoration was selected as the primary treatment to reestablish the courtyard design at the time of O'Neill's tenure. The restoration involved reconstructing the circulation system and terrace areas, removing later additions, and replanting vegetation. (See Figures 41 and 42.)

Certain portions of the O'Neill design were rehabilitated to accommodate public access and use of the site. For example, a subsurface grass paver path was installed to accommodate universal accessibility. This required removing some historic vegetation and changing the grade of a secondary historic walkway. In a few cases, plantings were also altered. In the lower patio of the courtyard, the loss of a significant historic tree increased the sunlight in the area, requiring substitute, sun-tolerant plant material to be placed in an area that historically had been in full shade. (See the insert titled, "Evaluating Treatment Actions" later in this section, and *A Guide to Cultural Landscape Reports: Appendices,* "Appendix D: Preservation Briefs (no. 36)," and *A Guide to Cultural Landscape Reports: Landscape Lines,* "Landscape Lines 13: Accessibility.")

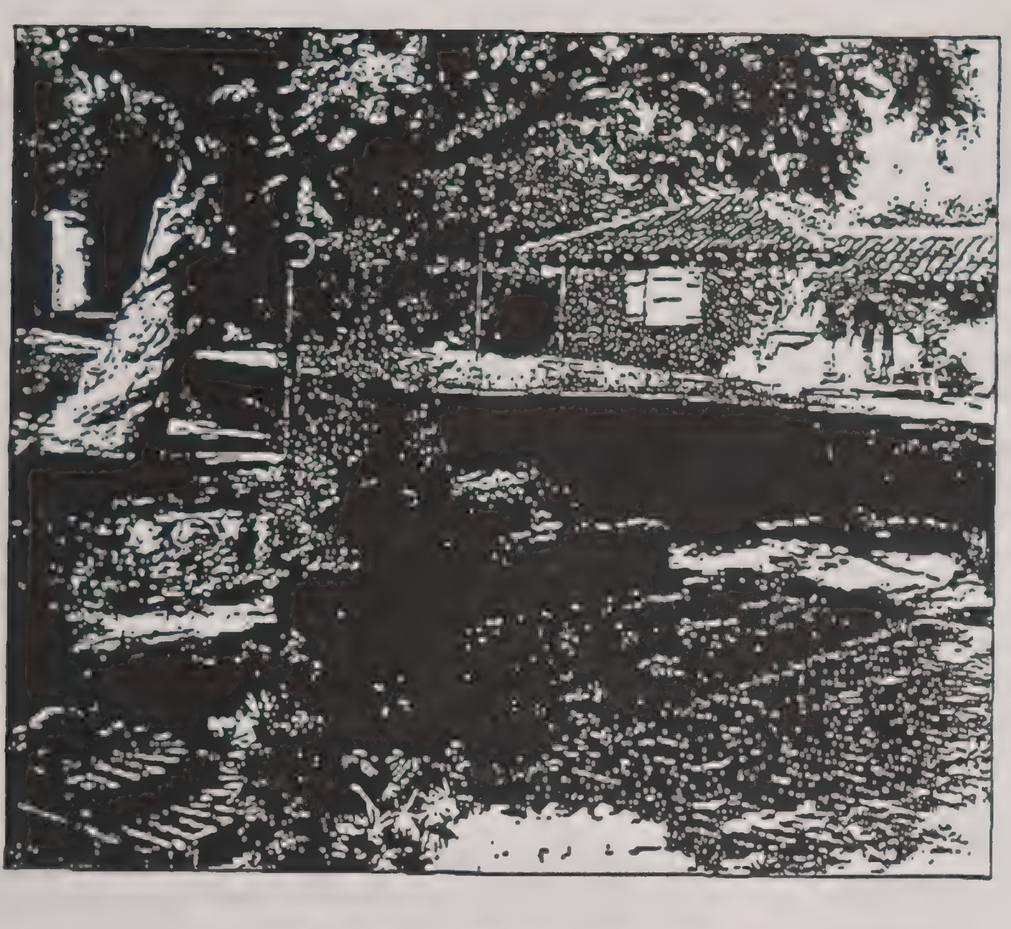


Figure 41. Lower terrace of courtyard at the Tao House, Eugene O'Neill's primary residence from 1937-1944. Historically, the lower terrace was heavily shaded by a large Walnut tree and included shade-tolerant plants. Eugene O'Neill National Historic Site. (NPS, c. 1940)

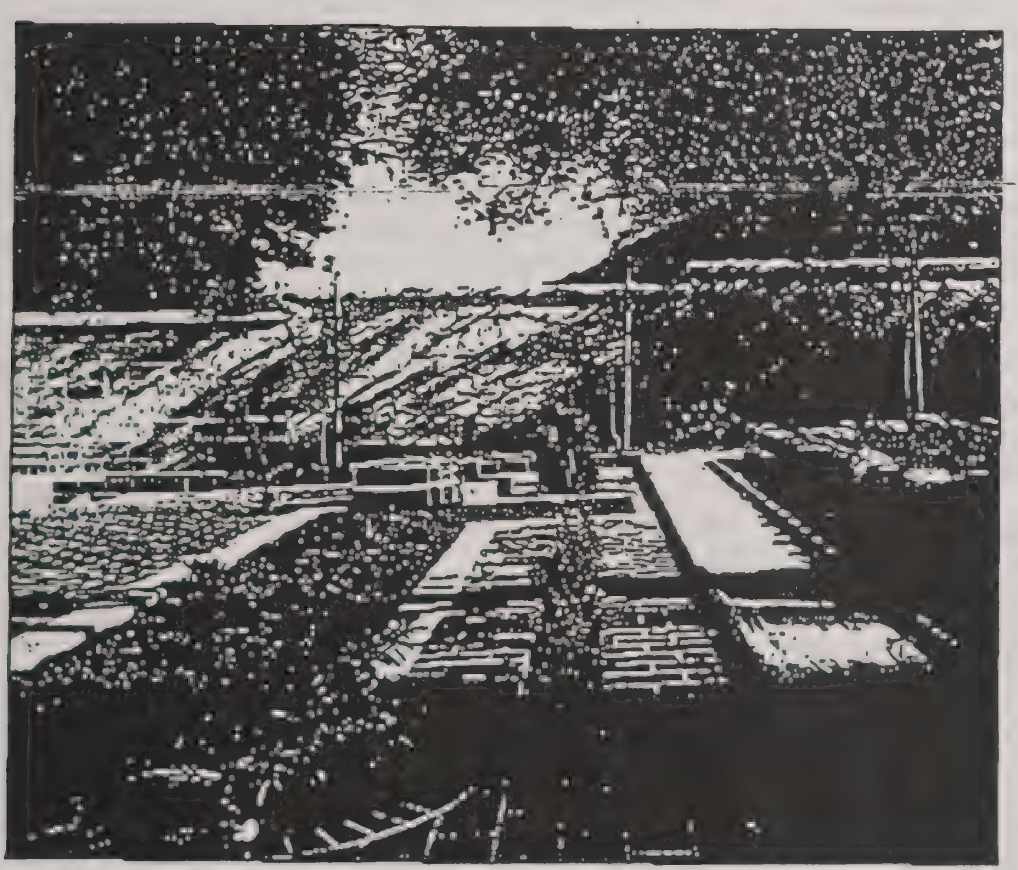


Figure 42. Lower terrace during project work. Restoration was selected as the primary treatment for the courtyard. However, certain courtyard features were rehabilitated based on changes in use and growing conditions. Some historic paths were altered to increase accessibility, and original plant material was substituted with sun-tolerant plants based on the loss of the adjacent tree (the tree will be replanted and original plants will be installed once the necessary growing conditions have been established). Eugene O'Neill National Historic Site. (NPS, c. 1988)

SECRETARY OF THE INTERIOR'S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES

Standards for Preservation

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.

2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

Standards for Rehabilitation

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new material will match the old in composition, design, color, texture, and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

10. New additions or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Standards for Restoration

1. A property will be used as it was historically, or be given a new use that reflects the property's restoration period.

2. Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces, and spatial relationships that characterize the period will not be undertaken.

3. Each property will be recognized as a physical record of its time, place and use. Work needed to stabilize, consolidate, and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

4. Materials, features, spaces, and finishes that characterize other historical periods will be documented prior to their alteration or removal.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.

6. Deteriorated features from the restoration period will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new material will match the old in design, color, texture, and where possible, materials.

7. Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence. A false sense of history will not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically.

8. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

9. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

10. Designs that were never executed historically will not be constructed.

Standards for Reconstruction

1. Reconstruction will be used to depict vanished or non-surviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture, and such reconstruction is essential to the public understanding of the property.

2. Reconstruction of a landscape, building, structure, or object in its historic location will be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures will be undertaken.

3. Reconstruction will include measures to preserve any remaining historic materials, features, and spatial relationships.

4. Reconstruction will be based on the accurate duplication of historic features and elements substantiated by documentary or physical evidence rather than on conjectural designs or the availability of different features from other historic properties. A reconstructed property will recreate the appearance on a nonsurviving historic property in materials, design, color, and texture.

5. A reconstruction will be clearly identified as a contemporary re-creation.

6. Designs that were never executed historically will not be constructed.

(Excerpted from *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, 1995.)

EVALUATING TREATMENT ACTIONS

Based on the management philosophy and primary treatment defined for a cultural landscape, detailed treatment actions are outlined in the CLR. Each proposed action is evaluated, using the applicable policy, guidelines, and standards, to ensure consistency in the treatment of the landscape as a whole. The following basic process underlies all treatment actions and is followed to guide decisions about physical work in a cultural landscape.

Identify, Retain and Preserve

Basic to the treatment of all cultural landscapes is the need to identify, retain, and preserve the characteristics, features, and qualities that contribute to the significance and integrity of the landscape and, as such, are important in defining its historic character (such as topography, vegetation, circulation, spatial organization).

Protect and Maintain

After identifying the characteristics, features, and qualities that are important and must be retained in the process of treatment work, measures are taken to protect and maintain them in good condition (preservation maintenance). For example, proper pruning, fertilization, pest control, and tree cabling to maintain structural stability are measures used to protect and maintain the health and vigor of vegetation.

Repair

If the physical condition of the identified characteristics, features, and qualities is poor, then repair is recommended. For example, limited replacement in-kind of deteriorated portions of a structure in the landscape and rejuvenative pruning of overgrown plant material constitutes repair of a landscape.

Replace

If the condition of a feature precludes repair, then replace the feature. The replacement is in-kind; that is, with the same form, detail, character, material, etc., as the original. If replacement in-kind is not possible, for technical, economic, or environmental reasons, then a compatible substitute material is considered. Examples of in-kind replacement include replacing a brick walkway where the bricks are spalling and broken beyond repair, and propagating over mature historic plant material for eventual replacement. An example of substitution includes replanting of an American Elm with a cultivar that is resistant to Dutch Elm disease.

Design for Missing Features

When an entire feature is missing, and it is determined desirable to reestablish the feature as part of the landscape's historical appearance, then a design for the missing historic feature is undertaken. If adequate historical, pictorial, and physical evidence exists to accurately reproduce the feature, then designing, constructing, and/or installing a new feature based on the information is appropriate. Examples include reestablishing an allee of trees along an entry drive or a series of steps leading to an overlook, based on adequate physical evidence. If there is inadequate information, the replacement reflects a new design that is compatible with the character of the landscape, yet contemporary so that a false historical appearance is not created.

Determining what is compatible yet contemporary is one of the most challenging aspects within the construct of treatment. The key to designing a compatible feature is identifying the historic character of the feature and determining a contemporary design which references the historic character in scale, detail, composition, and materials. For example, a treatment recommendation is to reestablish a fence around a farmstead but there is insufficient evidence regarding the exact historic design. Based on the knowledge that picket fencing was historically used, the design principles that guide the replacement might include the siting, use of certain materials, and incorporation of the vertical, uniform character of a picket fence in the design. In order to distinguish the fencing from an accurate reproduction, a contemporary design (such as a square) for the top of each picket might be chosen.

Compatible Alterations and Additions

Alterations and additions to a landscape are often needed to assure continued use. Such additions and alterations, however, do not radically change, obscure, or destroy significant historic spatial organization, materials, and features. Alterations, additions, or related new construction are differentiated from the historic fabric yet compatible with the character of the landscape to protect its historic integrity. Examples of compatible additions and alterations include locating a new parking area for visitors outside the historic core of a landscape, installing a ramp for accessibility in a manner that is visually compatible and does not destroy historic materials, and substituting unhealthy historic plant material with disease resistant modern varieties.

(Derived from *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, 1995.)

Emerald Necklace Citizen's Advisory Committee

Dodge Hall, Northeastern University
Room 450

Tuesday, July 17, 2000
6:00p.m. - 8:30p.m

Agenda

I. **Welcome & Comments Received**

__Fredie Kay__, MA Office of Dispute Resolution, CAC Facilitator
__John Burckardt__, Project Manager

II. **Project Update**

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

III. **Presentation: Historical Landscape Resources**

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.
Dr. Charles Beveridge
Historian, Olmsted Papers
Marion Pressley, FALSA, President
Pressley Associates, Inc.

Q&A/Discussion with CAC

IV. **Questions and Answers (General Public) Wrap Up**

V. **Fredie Kay Introduction of Susan Jeghelian,**
Massachusetts Office of Dispute Resolution

Camp Dresser & McKee Inc.

Muddy River Restoration Project

Historic Resources

July 17, 2000

Bruce Conklin PE, CDM
Marion Pressley, Pressley Associates, Inc.
Dr. Charles Bevridge

Meeting Objective

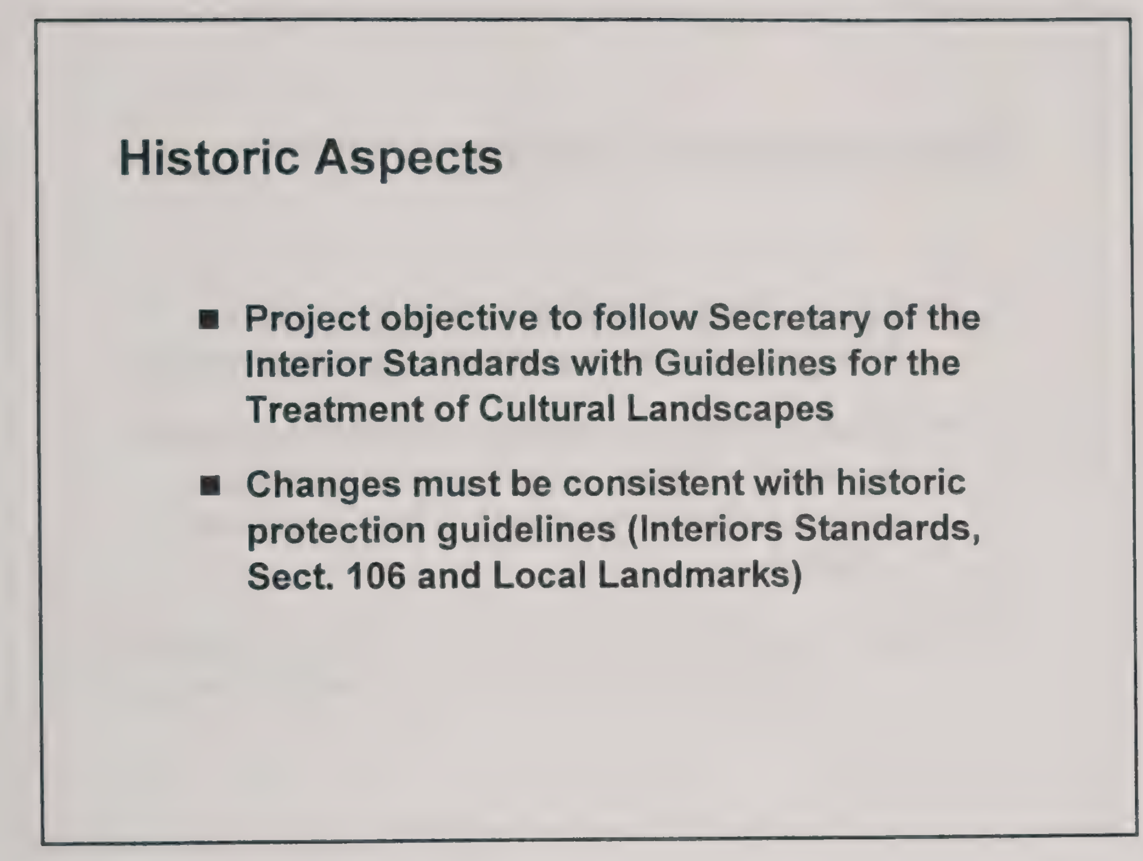
- Obtain CAC views on suggested historic resource treatment as outlined in master plan
- Resolve historic treatment and habitat restoration goals

Presentation Outline

- Synopsis of habitat meeting
- Overview of historic resource investigation
- Presentation of historic resources
- Discussion of master plan

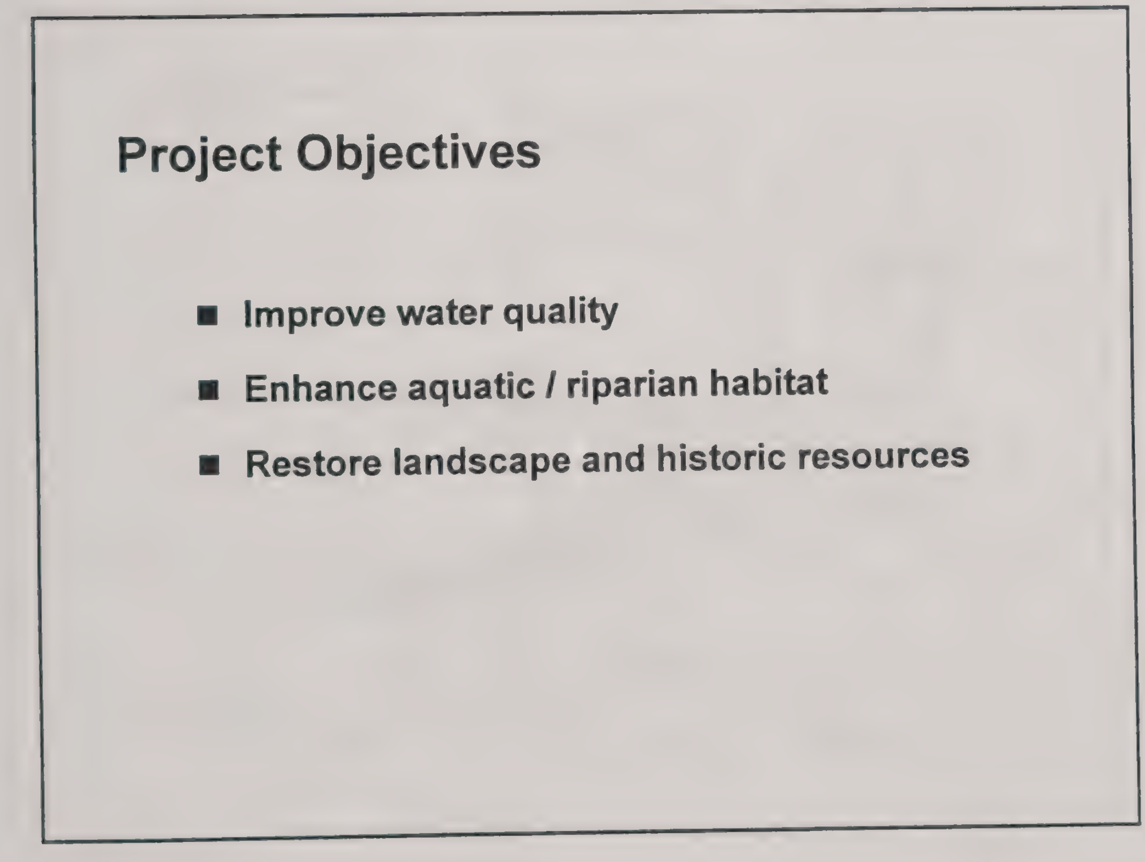
Regulatory Controls

- Limited project under Wetlands Act
- Flood channel
  - One of eight interest areas under 310CMR10.01
- Habitat improvements
  - One of eight interest areas, subject to 310CMR10.53 - “improve the natural capacity of a reasource...”



Historic Aspects

- Project objective to follow Secretary of the Interior Standards with Guidelines for the Treatment of Cultural Landscapes
- Changes must be consistent with historic protection guidelines (Interiors Standards, Sect. 106 and Local Landmarks)



Project Objectives

- Improve water quality
- Enhance aquatic / riparian habitat
- Restore landscape and historic resources

Potential Habitat Improvements

- Where resource areas are not primarily invasive species - preserve where possible
- Where resource areas are primarily invasive species - replace invasive species with wetland species and add adjacent upland vegetation

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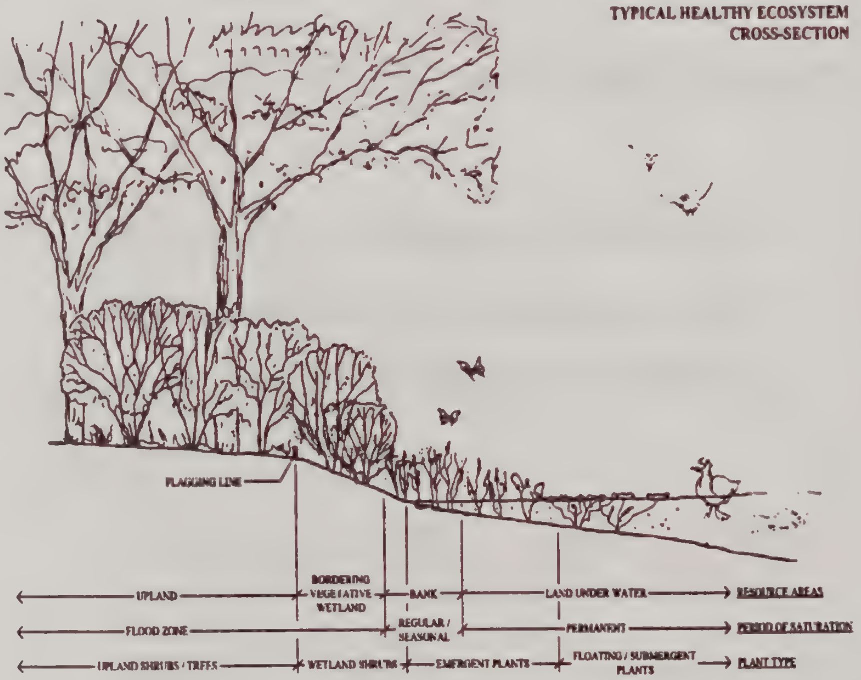
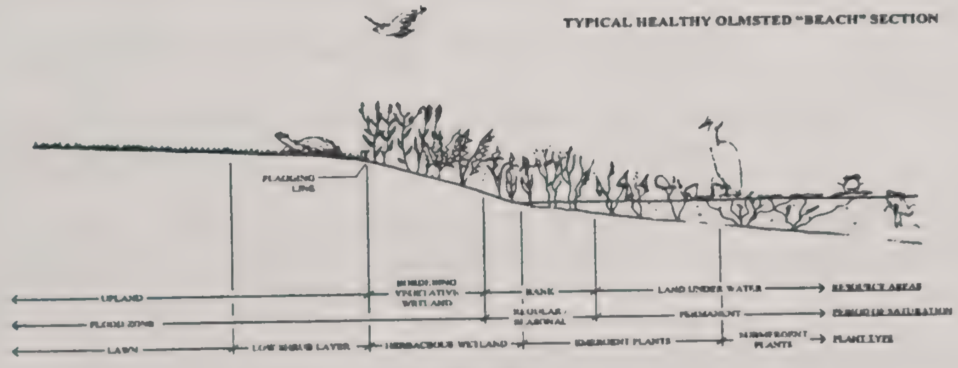
TYPICAL HEALTHY ECOSYSTEM
CROSS-SECTION



Potential Habitat Changes (con't)

- **Bank areas - stabilize "beach" areas or add plantings**

Definition of a "beach" area is an Olmsted term for a segment open to visual access to river



Discussion (con't)

- Questions
  - What is the CAC's view of the consultants' conclusion that in order to enhance habitat the biodiversity of the plant community must be increased?
  - What is the CAC's view of the consultants conclusion that removal of invasive monoculture species is a significant component of increasing biodivesity of plant species?

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE MEETING

Presentation on Historic Resources in the Muddy River System

Dr. Charles Beveridge and Marion Pressley, FASLA

July 17, 2000

List of Slides used in Presentation

Dr. Charles Beveridge

1. 1892 Study of Views and Planting Plan with comments by J. C. Olmsted & Warren Manning (FLONHS # 927-95).

   1893 Planting Plan at Longwood Bridge, Riverway (FLONHS # 930-61).

2. Spring 1892 Riverway under construction.

   1889 Grading Plan at Longwood Bridge; scale 1"=40', (FLONHS # 938-18).

Marion Pressley

3. July 23,1881; Plan of Proposed Muddy River Improvement Showing Contours (Survey) (FLONHS # 930-1a).

   July 23,1881; Plan of Proposed Muddy River Improvement Showing Contours (Survey) (FLONHS # 930-1b).

4. 10 1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park, Lithograph; (FLONHS); scale 1"=40

   Detail of same 1892 Plan showing only what is now Olmsted Park.

5. 1890 Grading Plan for Ward's Pond; scale 1"=40'; (BPRD # 18207A).

   1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park; Lithograph; scale 1"=40; detail of Ward's Pond; (FLONHS).

6. December, 1894 Riverway and Leverett Park Plan Showing Position of Electric Lights and Conduit; City of Boston Park Dept Olmsted Park Showing Position of Electric Lights and Conduit No. 7; scale 1"=40'; (BPRD # 14203B).

   December 1900; City of Boston Park Department Olmsted Park; (plan combining Jamaica Pond and Olmsted Park); scale 1"=40'; (FLONHS).

7. 1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park; Lithograph; scale 1"=40'; comments on planting over 1892 plan scale 1"= 40'; (FLONHS # 923-87).

   1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park, Lithograph; scale 1"=40; comments over 1892 plan by H.H. Blossom, August 26, 1915; (FLONHS).

Aerial Photos:

8. May 15, 1985; Aerial Photo; Ward's Pond Olmsted Park; Topo-Metrics, Inc., New York.

December 7, 1985; Aerial Photo; Ward's Pond Olmsted Park; Topo-Metrics, Inc., New York.

Photos:

9. October 2,1901; View of Ward's Pond looking toward Chestnut from Jamaicaway; (FLONHS # 964-25).

c. 1901; View of Ward's Pond looking toward Perkins Street from the Jamaicaway; (FLONHS # 964-24).

10. c. 1900 East side of Ward's Pond looking Pond (BPL Print room).

c. 1900 East side of Ward's looking south (BPL Print room).

11. October 2, 1901 East side of Ward's Pond looking North (BPL Print room).

c. 1904 Ward's Pond looking South (BPL Print room).

12. c.1904 Ward's Pond looking South (FLONHS #964-22).

1990 early May at Ward's Pond looking south (Pressley).

Drawings:

13. c. 1890 Grading Plan for Natural History Pools; (scale 1"=40'; BPRD # 18205A).

1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park; Lithograph; scale 1"=40'; detail of Natural History Pools (FLONHS).

14. c. 1890 The Parkway walks and pools between Ward's Pond and Perkins Street scale 1"=40'; (BPRD # 18000A).

December, 1894 Riverway and Leverett Park Plan Showing Position of Electric Lights and Conduit No. 6; scale 1"=40'; (BPRD #14200A).

15. Blank

c. 1893 Planting Plan for Willow Pond & Natural History Pools; scale 1"=40'; (FLONHS #927-136).

Aerial Photos:

16. May 15, 1985; Aerial Photo; Leverett Pond; Topo-Metrics, Inc., New York.

May 15, 1985; Aerial Photo; Willow Pond; Topo-Metrics, Inc., New York.

Photos:

17. c. 1920 Willow Pond photo by Leon Abdalian; winter scene (BPL Print room).

c. 1920 Willow Pond photo by Leon Abdalian; winter scene of bridge and pond (BPL Print room).

18. Willow Pond bridge culvert at Willow Pond Road; (BPRD).

    Willow Pond waterfall from history pool to Willow Pond; (BPRD).

19. Willow Pond bridge culvert at Willow Pond Road; (FLONHS # 923-5).

    c. 1900; Willow Pond; (HGSD).

20. June 10,1898; Olmsted Park Cove & Cove Bridge by L. A. Andrews; (FLONHS # 923-6).

    c.1900 Olmsted Park Cove and Cove Bridge(HGSD).

Drawings:

21. c. 1898 Grading Plan Olmsted Park detail of Leverett Pond Cove and bridge.

    c. 1934; Olmsted Park Cove and Bridge showing exist. Vegetation; scale 1"=40' (WPA Project # 15401); (BPRD # 18203A).

22. 1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park; Lithograph; scale 1"=40; detail of Daisy Field; (FLONHS).

Photo:

August, 1916; Olmsted Park view of Elm in Daisy Field; (FLONHS # 964-27).

23. 1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park; Lithograph; detail of Leverett Pond; scale 1'=40'; (FLONHS).

Photo:

c. 1900 Leverett Pond form Allerton Overlook Olmsted Park (Brookline Public Library).

Riverway Park:

Drawings:

24. July 23,1881; Plan of Proposed Muddy River improvement Showing Contours (Survey); (FLONHS # 930-1c).

    July 23,1881; Plan of Proposed Muddy River improvement Shown in Contours (Survey); (FLONHS # 930-1d).

25. 1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park: Lithograph; scale 1"=40'; Detail showing only the Riverway from Boylston Street (Route 9) to Brookline Avenue at Audubon Road (Park Drive); (FLONHS).

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26. 1890 Grading Plan Section C Island Bridges in the Riverway, Boston side only scale 1"=40'

    1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park; Lithograph; scale 1"=40'; Detail showing Island Bridges at Netherlands Road; (FLONHS).

27. March/12,1892; Plan showing views and planting Section 3, both sides at Island Bridges near Netherlands Road; (FLONHS # 927-97).

    1893 The Parkway Planting Study ,Section 3, Longwood Avenue to Brookline Avenue. both sides; scale 1"=40'; (FLONHS 930-62).

28. 1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park; Lithograph; scale 1"=40'; comments on planting over 1892 plan scale 1"= 40'; (FLONHS # 930-81).

1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park, Lithograph; scale 1"=40; comments over 1892 plan by H.H. Blossom, August 26, 1915; (FLONHS).

Aerial Photos:

29. 1925 Aerial Photo; The Muddy River valley from Brookline; photo Fairchild Aerial Survey, Inc., New York; (BPL Print room).

1925 Aerial Photo; The Muddy River valley from Brookline; photo Fairchild Aerial Survey, Inc., New York; detail of Island Bridges at Netherlands Road; (BPL Print room).

30. May 15, 1985; Aerial Photo; The Riverway; Topo-Metrics, Inc., New York.

April, 1991; Aerial Photo; The Riverway; Landslides/Alex MacLean Boston, MA.

Photos:

31. Spring 1892; Riverway under construction near Brookline Avenue; (FLONHS #88117/6370/47).

Spring 1892; Riverway under construction the Longwood section; (FLONHS #88117/15370/44).

32. c. 1901 Riverway upstream form Longwood Bridge; (FLONHS #930-73).

1907 Riverway upstream form Longwood Bridge; photo by Thomas Sears; (FLONHS #88117/55).

33. Spring 1892 Riverway under construction upstream from Longwood Bridge; (FLONHS # 88117/5370/52).

c. 1920 Upstream form Longwood Bridge 28 years after construction by Elison (FLONHS # 930-71).

34. 1907 Downstream from footbridge at Longwood photo by Thomas Sears" FLO "beach"; (FLONHS # 930-49).

1910-12 Downstream from footbridge at Longwood photo by Thomas Sears; FLO "beach" ; (FLONHS #930-51).

35. 1904 View looking upstream above Brookline Avenue 12 years after construction showing wetland plantings; (FLONHS #930-102B).

1915 View looking upstream above Brookline Avenue 23 years after construction showing wetland plantings; ((FLONHS # 43056-30) .

36. Early May 1920; View downstream above Longwood Bridge, 28 years after construction (FLONHS #930-76)

Early May 1920; View along path, 28 years after construction (FLONHS #930-79).

Drawings:

37. 1889 The Parkway from Brookline Ave. at Boylston St. to Longwood Ave. showing Grading and other Construction Details; scale 1"=40' (FLONHS # 930-18).

Dec. 10,1890, City of Boston Parks, Riverway Grading Plan Section A, at Brookline Avenue at Boylston St., scale 1"=40'.(BPRD)

38. 1892 Plan of the Parkway between Muddy River Gate House and Jamaica Park (scale 1"=40' Detail showing Brookline Avenue near Fens; (FLONHS).

1893 The Parkway topographic plan for planting study Section 1 Brookline Ave. to Saint Mary's (FLONHS #930-60).

39. c.1892 Study by JCO and Manning of views and plant massings in the Riverway Showing Brookline Avenue at Brookline Avenue at Audubon Road; (FLONHS # 923-87).

Aerial Photo:

Aerial photo 1998 of Sears parking lot; photo Landslides/Alex MacLean, Boston Massachusetts.

Drawings:

40. Revised July 1921 Boston Parks Dept. Back Bay Fens Sheet 8 of 8; scale 1"= 40'; (BPRD # 12221A).

Detail of Sheet 8 of 8 above.

Photos:

41. c.1905 Bridle Path Bridge near Audubon Road (FLONHS # 8117/5364-44).

c.1905 Pedestrian side of Bridal Path Bridge near Audubon Road, now removed (FLONHS # 930-43).

42. c.1905 Riverway Gate House at Brookline Ave.: photo by J.G. Langdon; (FLONHS # 930-99).

January 27, 1901, Riverway Gate House and headwall at Brookline Ave; photo by P. R. Jones;(FLONHS # 930-66).

43. 1898 Fens Bridge Headwall at Audubon Road Back Bay Fens; photo by James G. Langdon; (FLONHS # 916-62).

c.1900 View towards Brookline Avenue from Fens Bridge; (FLONHS #916-25).

Back Bay Fens:

Drawings:

44. 1879 Proposed Improvement of Back Bay, Lithograph; scale 1"=40'; (FLONHS).

Dec. 3, 1887 Map of the Back Bay Fens, Commonwealth Avenue, Beacon Street and Audubon Road; (FLONHS).

45. November 1921; Revised General Plan for Back Bay Fens; Arthur A. Shurtleff; (BPRD).

1926 General Plan for Back Bay Fens; Arthur A. Shurtleff; (BPRD).

46. 1977 Map of the Back Bay Fens Restoration; Carol R. Johnson Assoc., scale 1"=50'.'

1986 Back Bay Fens Olmsted Historic Landscape Preservation Program Master Plan; Walmsley/ Pressley joint venture, scale 1"=100'.

47. 1887 Map of the Back Bay Fens; Commonwealth Avenue, Beacon Street and Audubon Road, Lithograph; (FLONHS).

July 1921; Overlay by Arthur A. Shurtleff on 1887 Map of the Back Bay Fens, by F. L. Olmsted.

48. November 1921; Back Bay Fens and vicinity compiled by Arthur A. Shurtleff; (BPRD).

Aerial Photo:

1925 Aerial photograph back Bay Fens; photo by Fairchild Aerial Survey Inc, New York (BPL print room).

Drawings:

49. November 1921; Back Bay Fens and vicinity compiled by Arthur .A. Shurtleff; (BPRD).

March 25, 1999; Back Bay Fens; Surveying and Mapping Consultants (SMC); scale 1"=100'.

50. Dec. 4, 1878; Topographic Plan for Back Bay Fens showing Gravely Point; (FLONHS # 916-1A).

1887; Map of the Back Bay Fens; Lithograph; (FLONHS).

51. August, 1921; Tentative Contours to Accompany Revised General Plan; scale 1"=100';(BPRD).

Detail of August 1921 study.

52. March 29, 1918; Study sheet of Back Bay Fens in Stadium area sheet No.6, scale 1"=40'; (BPRD # 12211A).

c.1929; Filling study at Fens athletic field/stadium; (BPRD).

53. March 24, 1927; Excavating, dredging, filling and loaming in the Fens between Boylston St, Audubon Road, Fenway & Agassiz Rd, (BPRD # 12231A).

Detail of March 24, 1927 study.

Aerial Photos:

54. c.1935 Aerial photo; by Fairchild Aerial Survey, Inc, New York (BPL Print Room).

December 20, 1965 Aerial photo by Aerial Photo International, Inc., Boston MA; scale 1"=400'.

55. May 1983 Aerial photo by Landslides/Alex MacLean # 1561.10.

May 15, 1985 Aerial photo by Topo-Metrics, Inc., Islip, NY.

56. March 1997 Aerial photo by Landslides/Alex MacLean # 6216.27.

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Photos:

57. General view of Back Bay Fens (FLONHS # 916-55).

August 1, 1896 photo by J.C. Olmsted of beach in Back Bay Fens (FLONHS # 916-7).

58. c. 1897 The Fenway, general view; photo by P.F. Johnson (BPL print room)

May 1932, Agassiz Road, Back Bay Fens (BPL print room)

58. c.1895 View towards Richardson Bridge Back Bay Fens, (HGSD) # 3/52).

c.1895 View of Back Bay Fens (HGSD # 3/49).

59. Spring 1925 Filling in the Back Bay Fens, view toward fire station (FLONHS # 916-50).

Spring 1925 Filling in the Back Bay Fens, view toward fire station (FLONHS # 916-49).

60. October 12, 1921 Fens Views; photo by P. Gallagher (FLONHS # 916-41).

October 12, 1921 Fens Views of area filled for athletic fields (FLONHS # 916-32).

61. October 12, 1921 Fens Views, view toward Museum of Fine arts; photo by P. Gallagher; (FLONHS # 916-39).

October 12, 1921 Fens Views, view toward Museum of Fine Arts; photo by P. Gallagher; (FLONHS # 916-45).

62. c.1931 View toward Richardson Bridge at site of future Victory Gardens; photo by P. Gallagher; (FLONHS # 916-73).

c.1931; Rose Garden in Back Bay Fens; design by Arthur A. Shurtleff; (FLONHS # 916-77)

63. c.1931; Detail view of FLONHS # 916-77 showing lagoon

September 1985; view of lagoon; (Pressley).

Charlesgate :

Drawings:

64. March 1878; Revision of Northern Part of Preliminary Plan for the Back Bay Fens; F. L. Olmsted; (FLONHS).

1879; Preliminary Plan for the Back Bay Fens; F. L. Olmsted; (FLONHS).

65. 1882; Revised plan for Beacon Street Entrance; F. L. Olmsted; (FLONHS).

March 1884; Diagram that accompanied the planting contract for Beacon Street Entrance, Back Bay Fens; J.C. Olmsted (FLONHS).

66. 1887; Map of the Back Bay Fens, lithograph, F. L. Olmsted.

Photos:

c. 1890's; Charlesgate at Commonwealth Avenue.

67. 1896; Beacon Street Entrance looking towards Boylston Street (Richardson) Bridge; photo by J.C. Olmsted (FLONHS).

c.1895 Muddy Brook opposite Hotel Somerset; (SPNEA BBF-19).

Drawings:

68. February 1912; Back Bay Fens Compiled Plan; scale 1"=40' (BPRD).

February 1923; Plan for vicinity of the Charlesgate; Arthur A. Shurtleff; (BPRD).

Photos:

69. c.1930; Charlesgate East and West, Arthur A. Shurtleff.

February 1931; Charles River Basin Preliminary Plan; Arthur A. Shurtleff, scale 1"=200'; (BPRD # MS 0006PM).

70. c.1924; East on Commonwealth Avenue from Charlesgate "Boston Then and Now" Peter Vanderwarker; West (The Bostonian Society).

1980; East on Commonwealth Avenue from Charlesgate West "Boston Then and Now" Peter Vanderwarker; (BPL print room).

Emerald Necklace Master Plan 1990 form Back Bay Fens, Riverway and Olmsted Park:

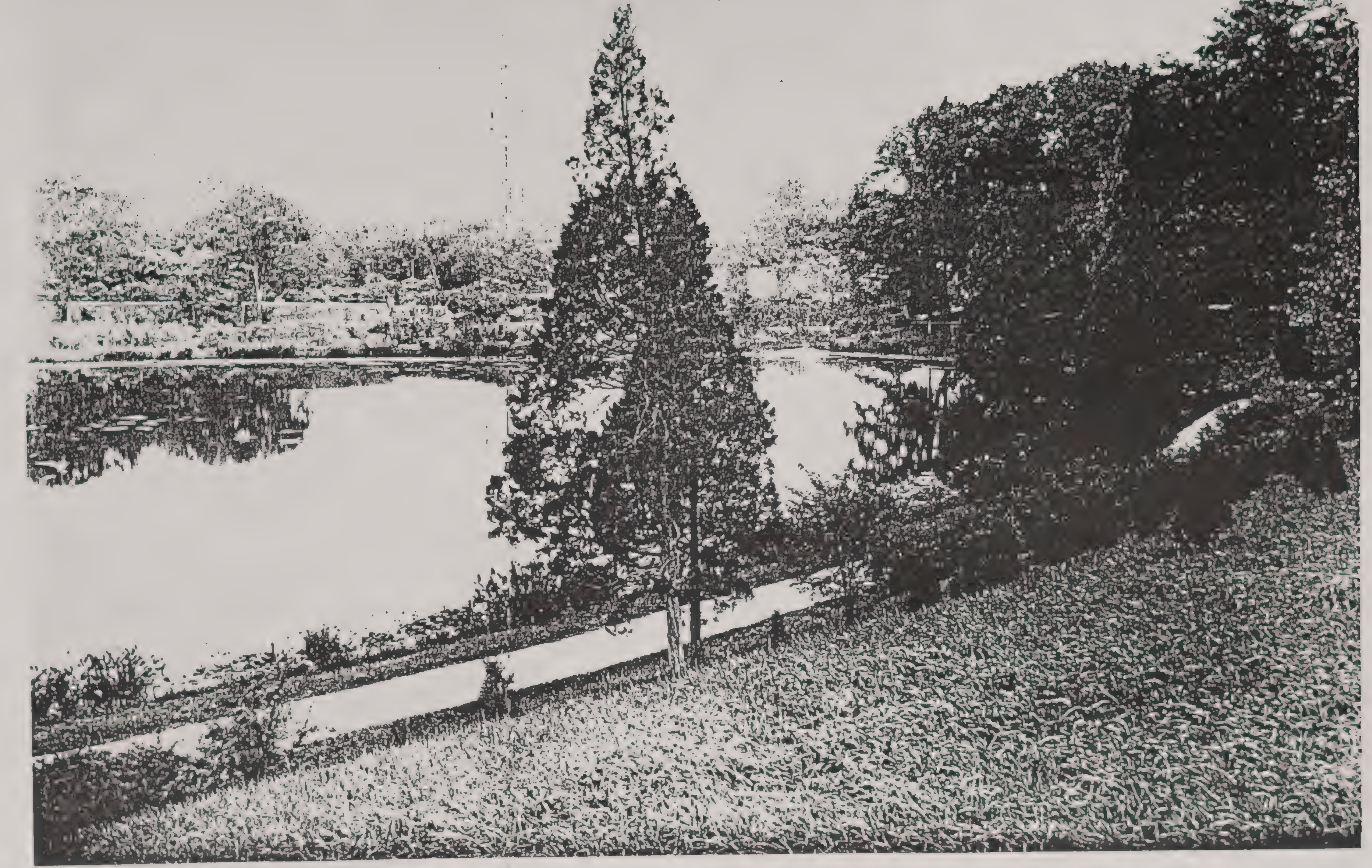
Drawings:

71. Blank

1986; Back Bay Fens Master Plan, Walmsley/Pressley joint venture.

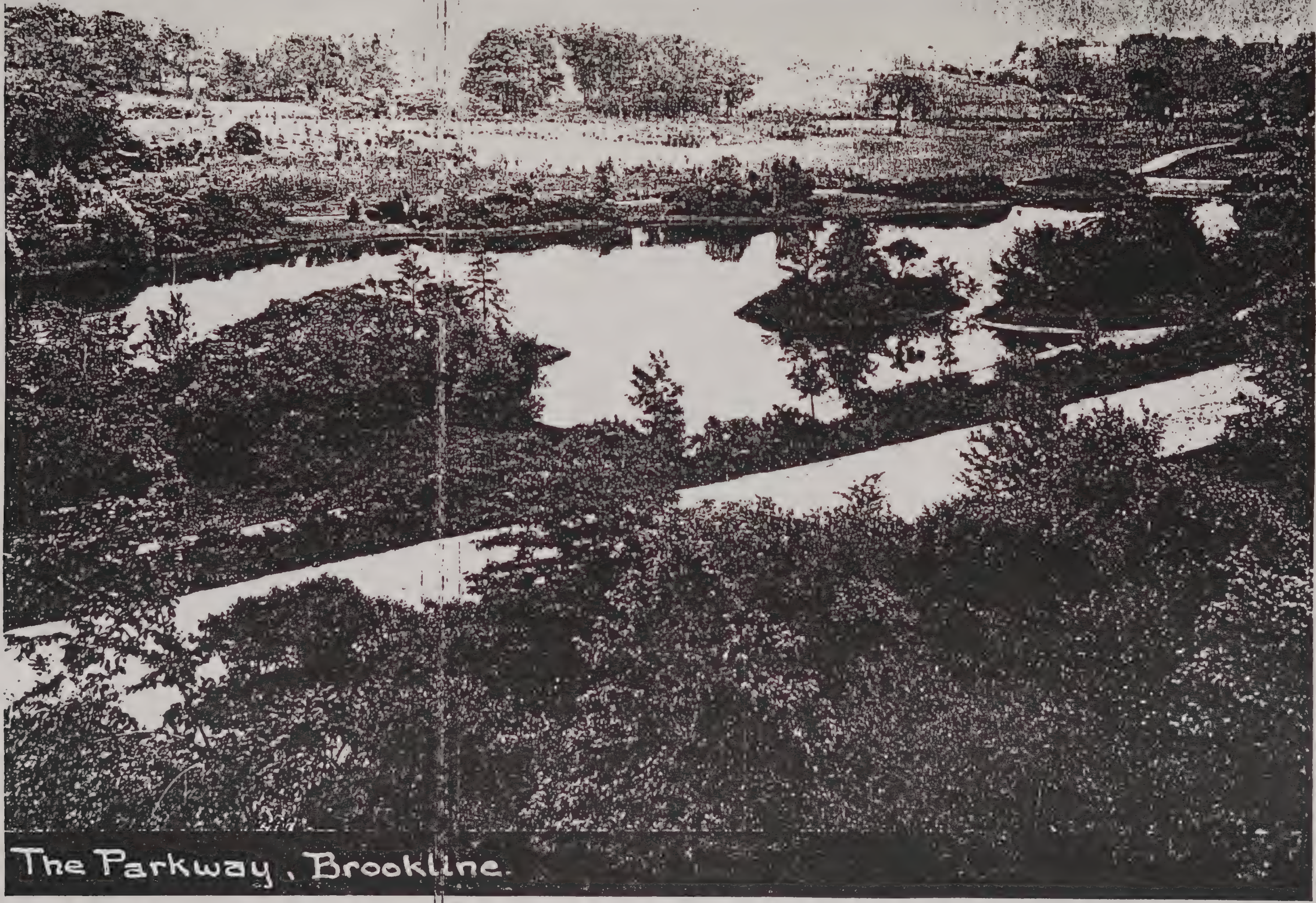
72. 1986; The Riverway Master Plan, Walmsley/Pressley joint venture.

1986; Olmsted Park Master Plan, Walmsley/Pressley joint venture.

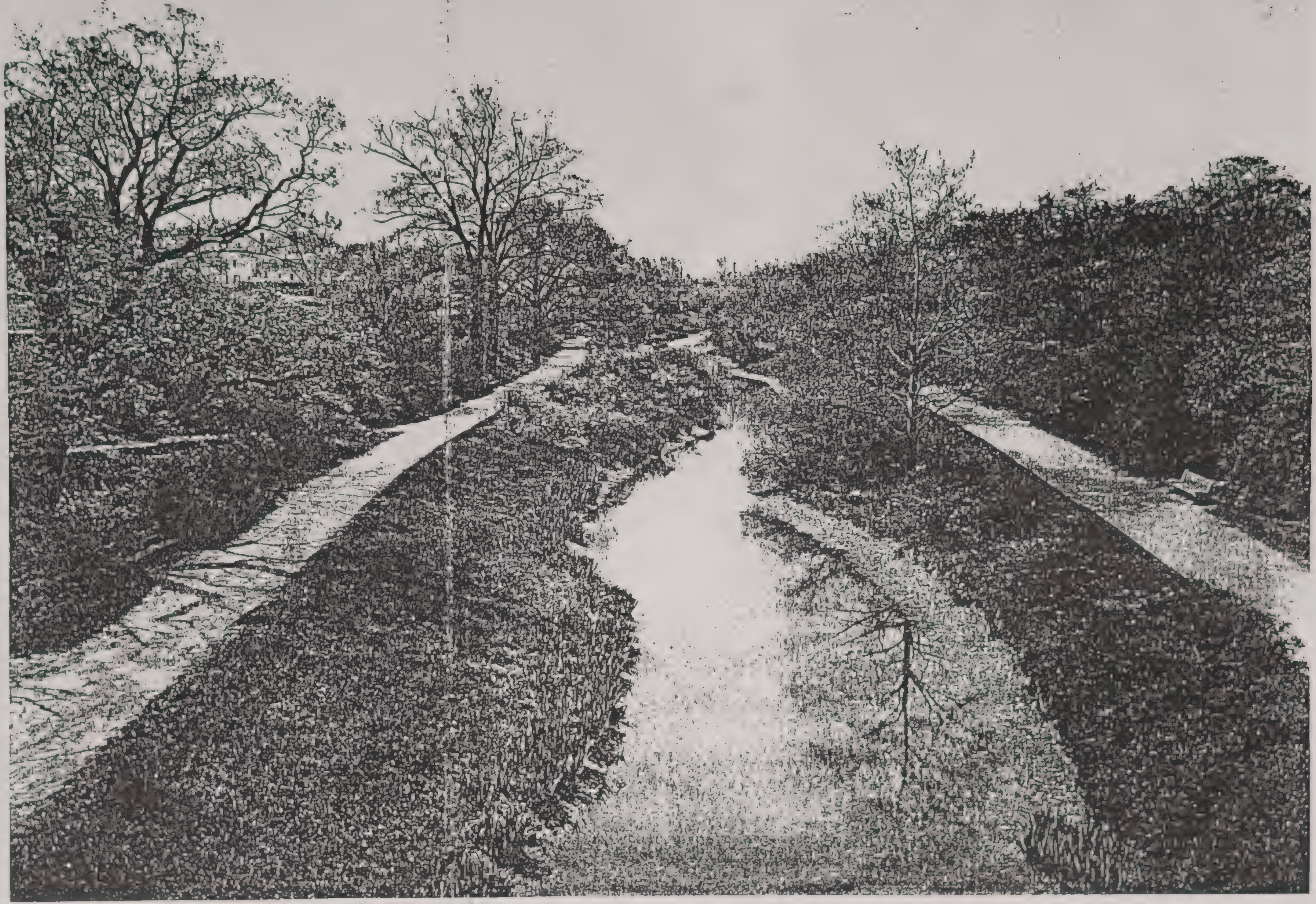


#964-25 Ward's Pond from near Jamaicaway looking Northwest towards Chestnut St. and Pond Ave. FLONHS

#923-5 Olmsted Park Willow Pond FLONHS

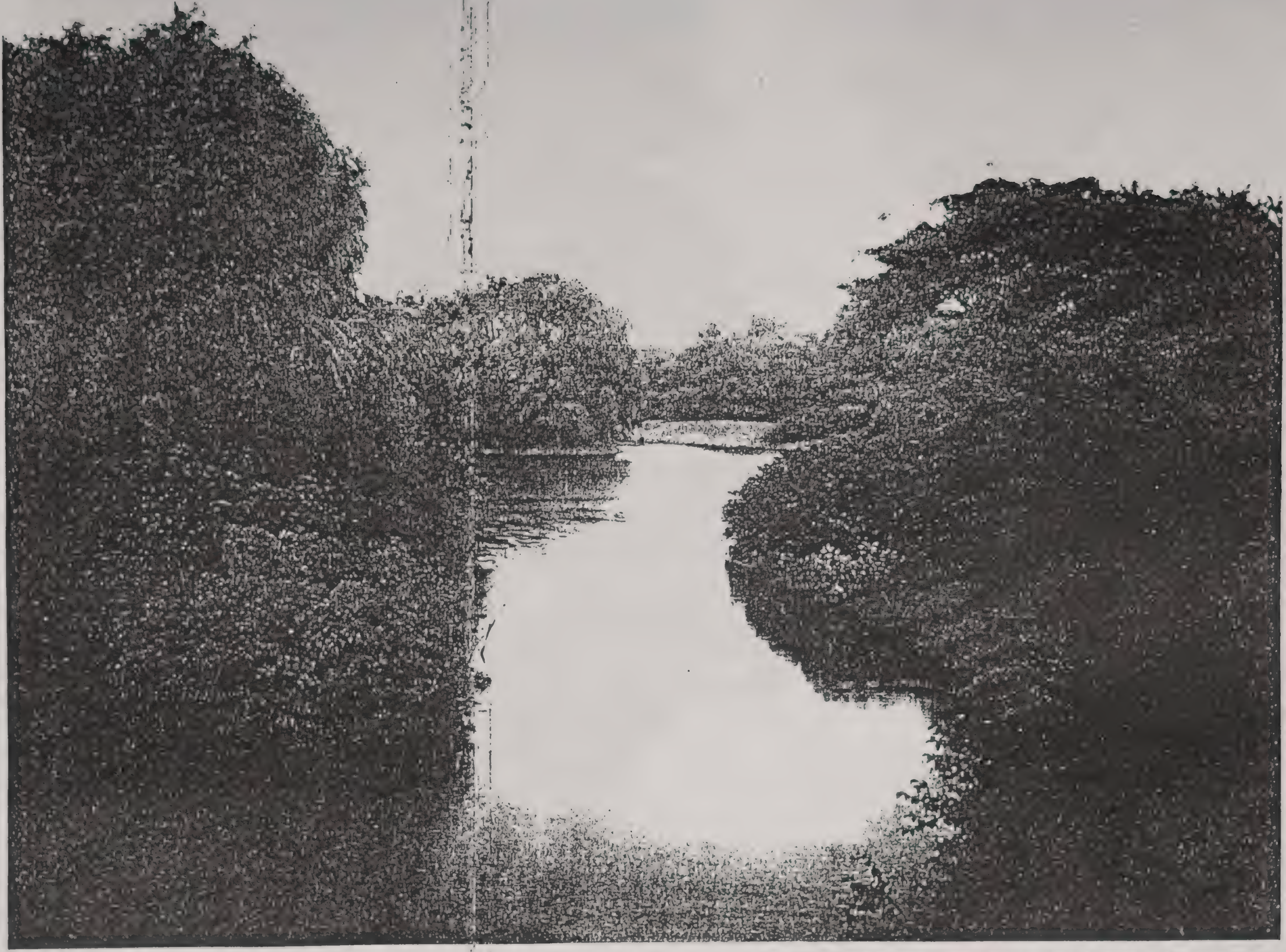


Olmsted Park View from Allerton Overlook c - Leverett Pond c.1900 (Brookline Public Librar



c.1901 Riverway 8 years after construction FLONHS #930-73

ELLISON

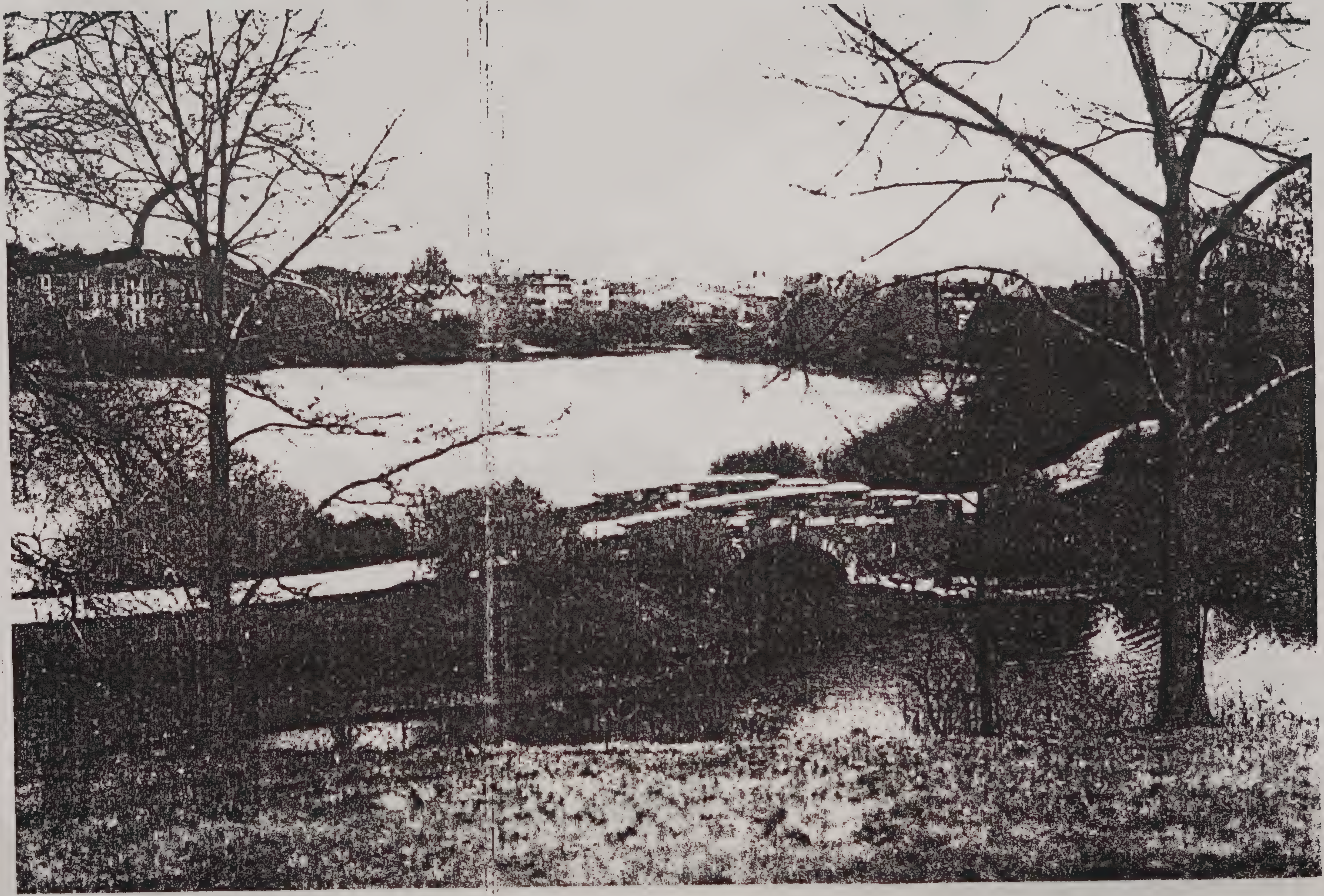


1907 Downstream from Footbridge at Longwood photo by T.Sears FLONHS #930-49 FLO "beach"

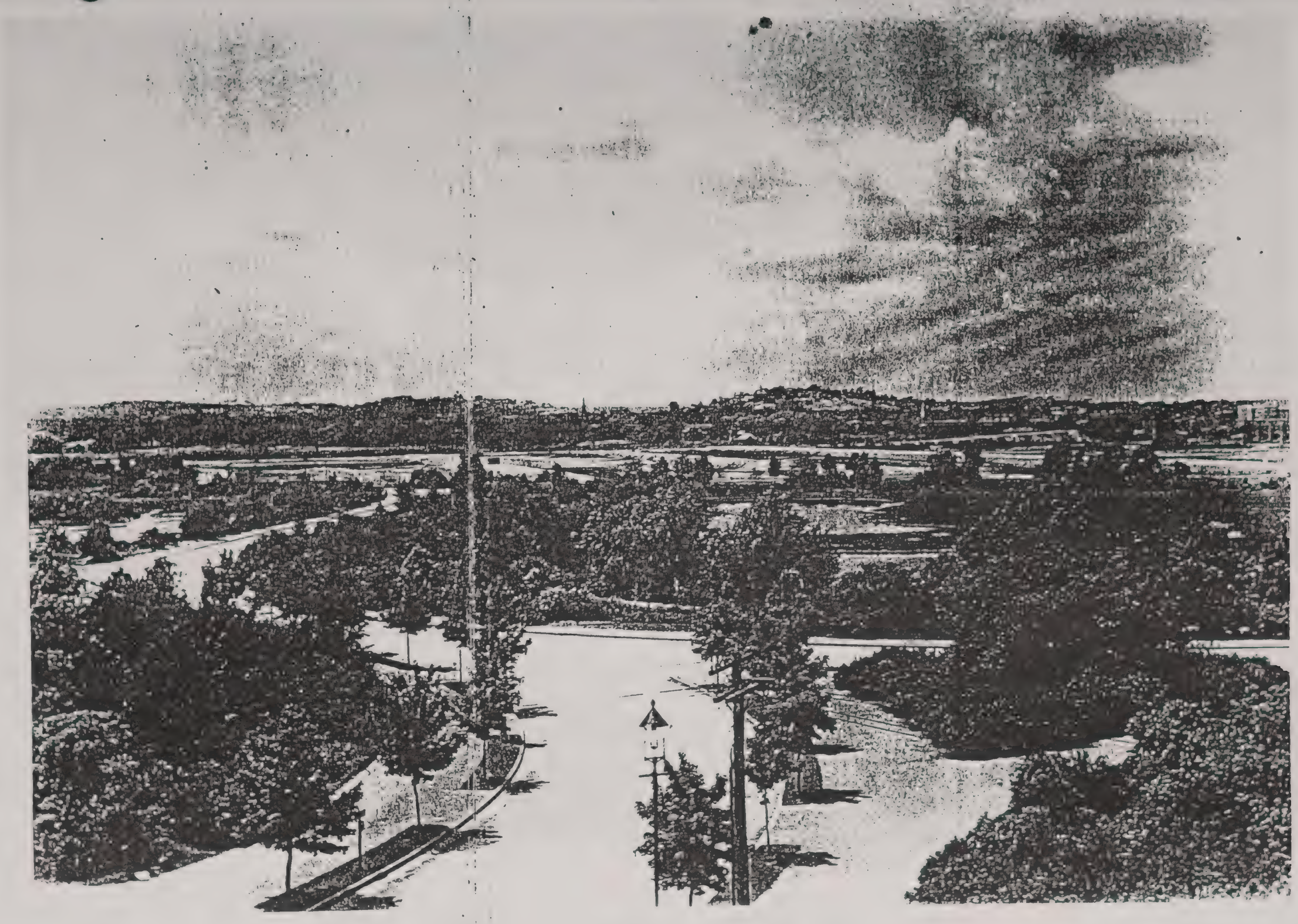
THO. ELLISON
BOSTON, MASS.

#930-99 The Riverway   Gatehouse at Brookline Ave by Langdon FLONHS

Back Bay Fens from Boylston Bridge 1896



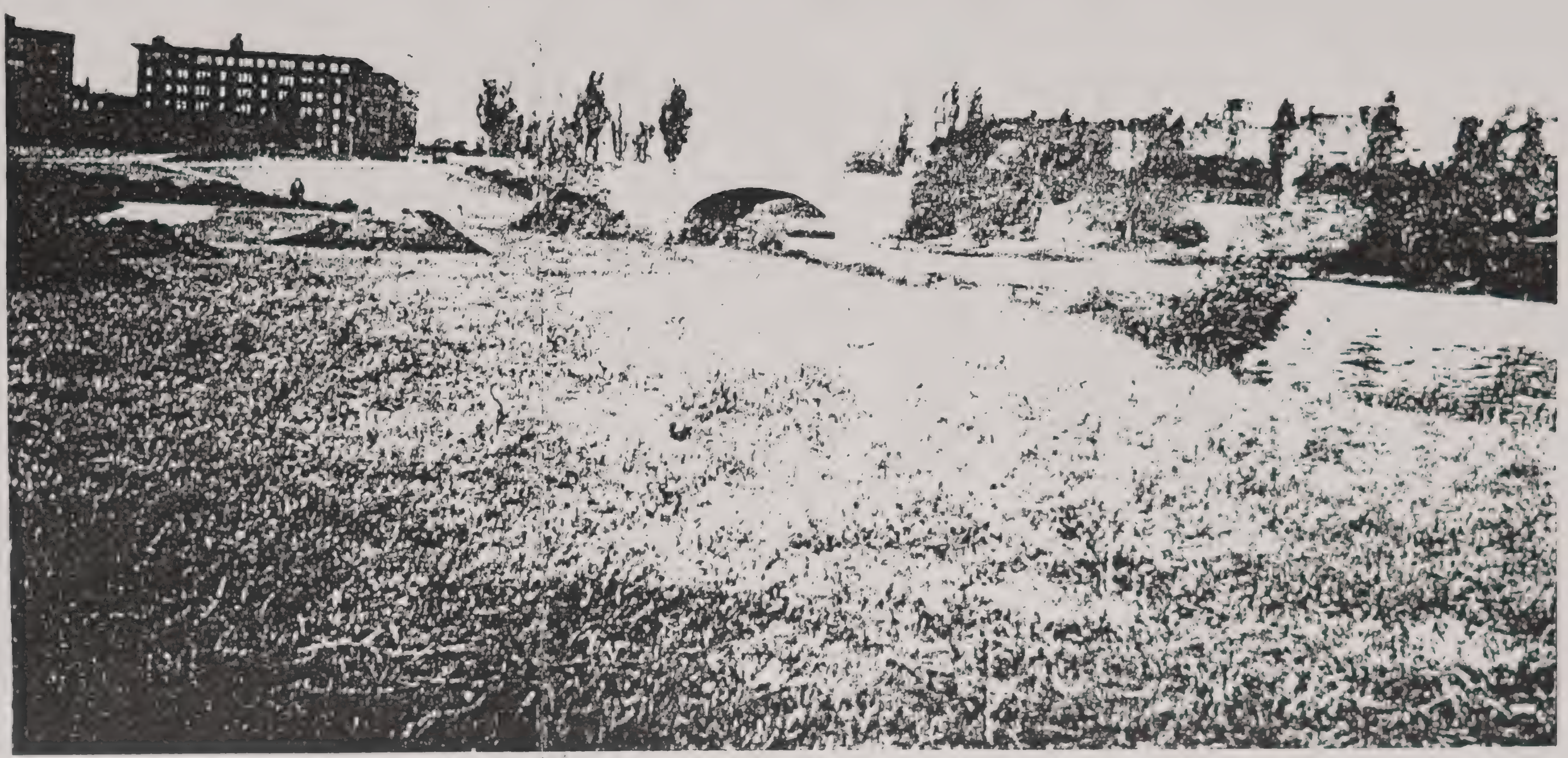
Olmsted Park–Granite stone bridge at Leverett Pond cove inlet c.1900 (HGSD)



#916-25 Back Bay Fens -The Fenway 1897(P.F.Johnson)

BPL

the Prairie [illegible] Gully, photo 10/18/81 FLONHS



#916-73 Fens Views by Percival Gallagher 1931 FLONHS

TOWARD A DEFINITION OF OLMSTEDIAN PRINCIPLES OF DESIGN

The 7 S's

SCENERY: Design of "passages of scenery" and profuse use of plantings, even in the smallest spaces and in areas intended for active use.

SUITABILITY: Creation of designs that are in keeping with the natural scenery and topography of the site: respect for, and full utilization of, the "genius of the place."

SPACE: Creation of designs that give an enlarged sense of space: bays and headlands of plantings, indefinite boundaries, constant opening of new views.

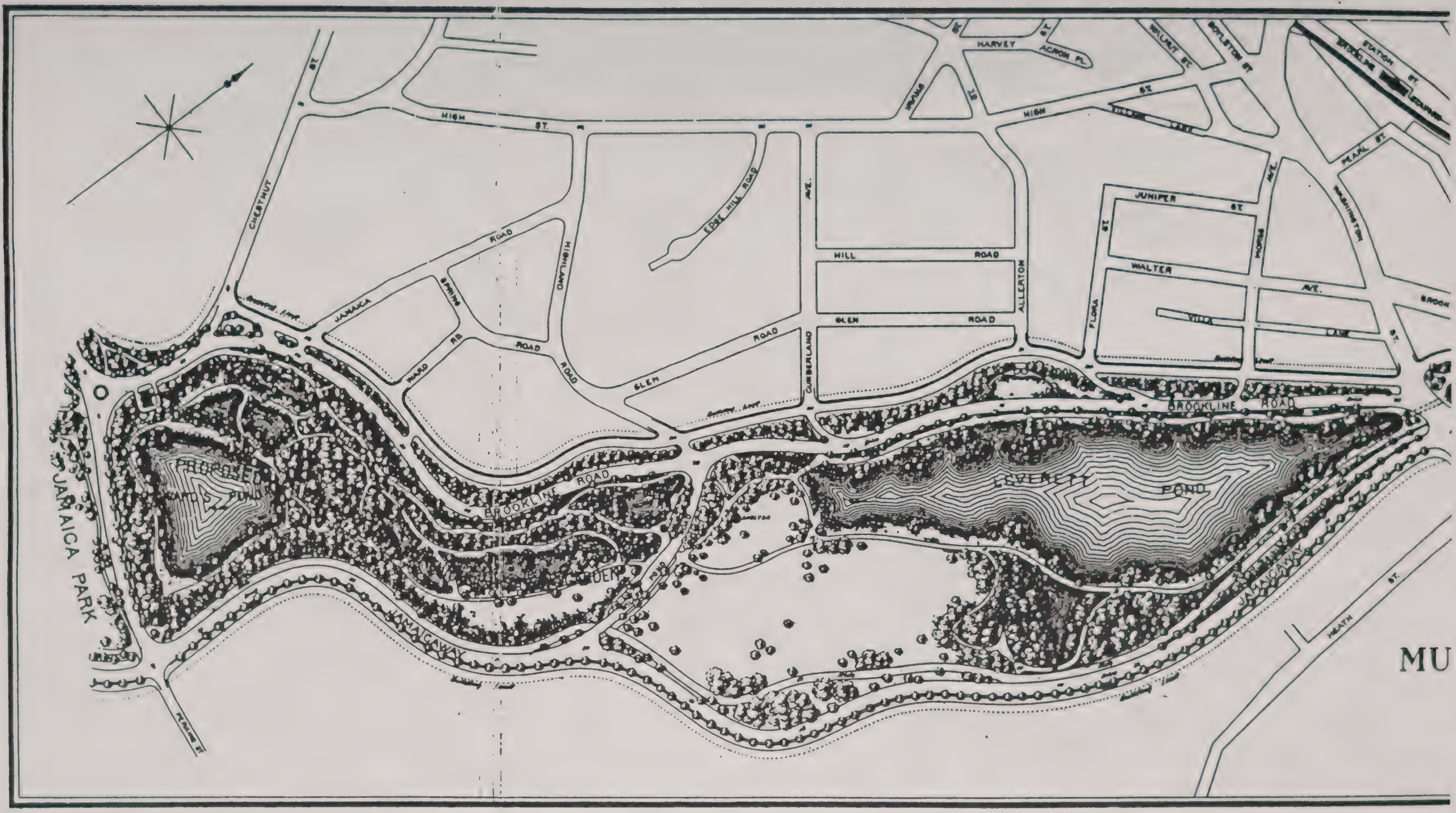
STYLE: Designing in specific styles for particular effects: primarily in the Pastoral style (open greensward with scattered trees, groves and bodies of water) for soothing, restful atmosphere, and in the Picturesque style (heavy planting, especially with shrubs, on broken terrain) for a sense of the richness and bounteousness of nature, with *chiaroscuro* effects of light and shade to produce a sense of mystery.

SUBORDINATION: Subordination of all features, all details, both of natural and artificial materials, to the overall design and the effect it is intended to achieve.

SEPARATION: Separation of areas designed in different styles, so that an "incongruous mixture of styles" will not dilute the intended effect of each; separation of ways, in order to insure safety of use and reduce distractions for those using the space; separation of uses that conflict with one another.

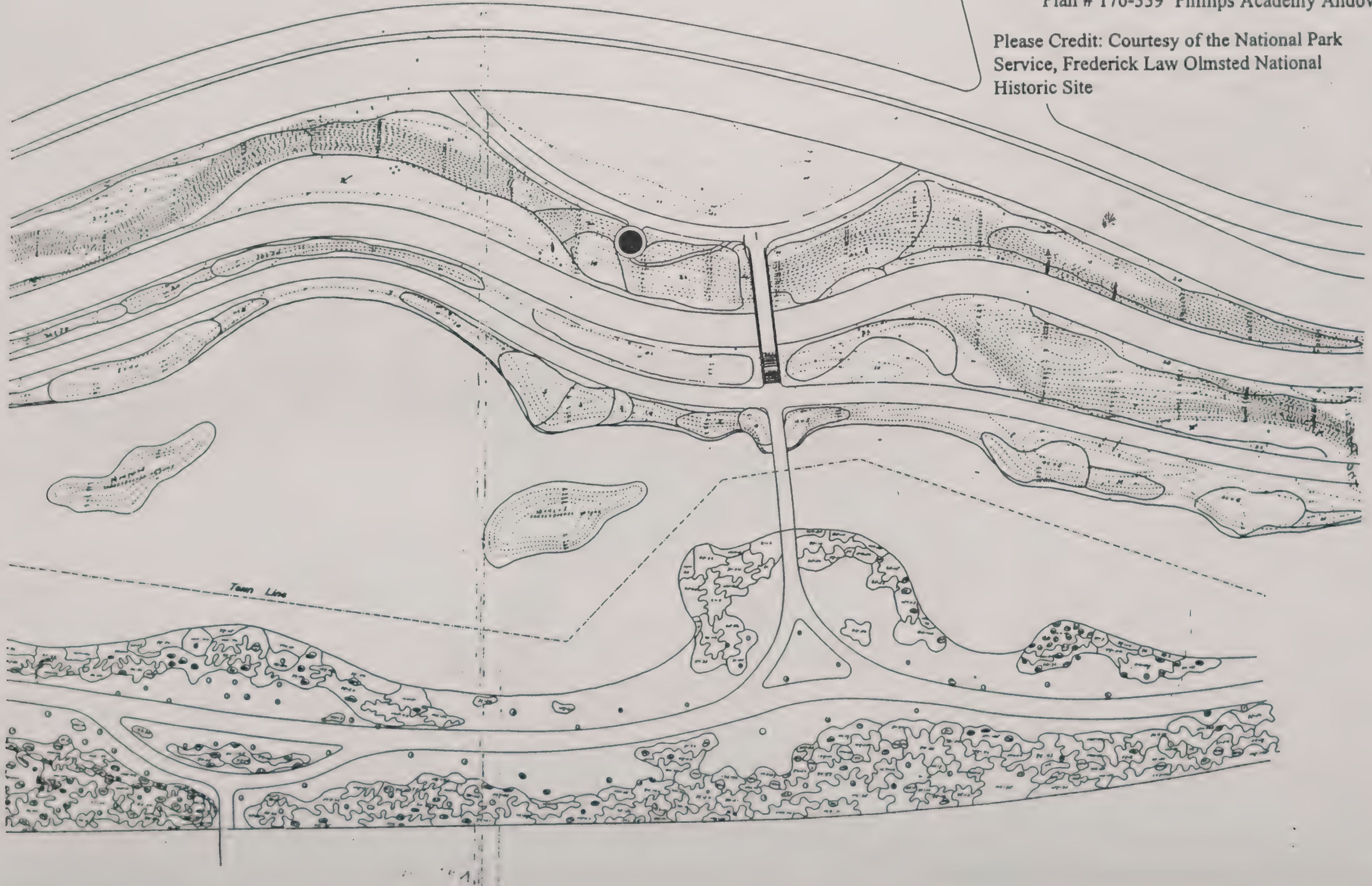
SANITATION: Provision for adequate drainage and similar engineering considerations, not simply arranging of superficial decoration; creation of designs to promote both the physical and mental health of users.

Charles E. Beveridge
April 25, 1981



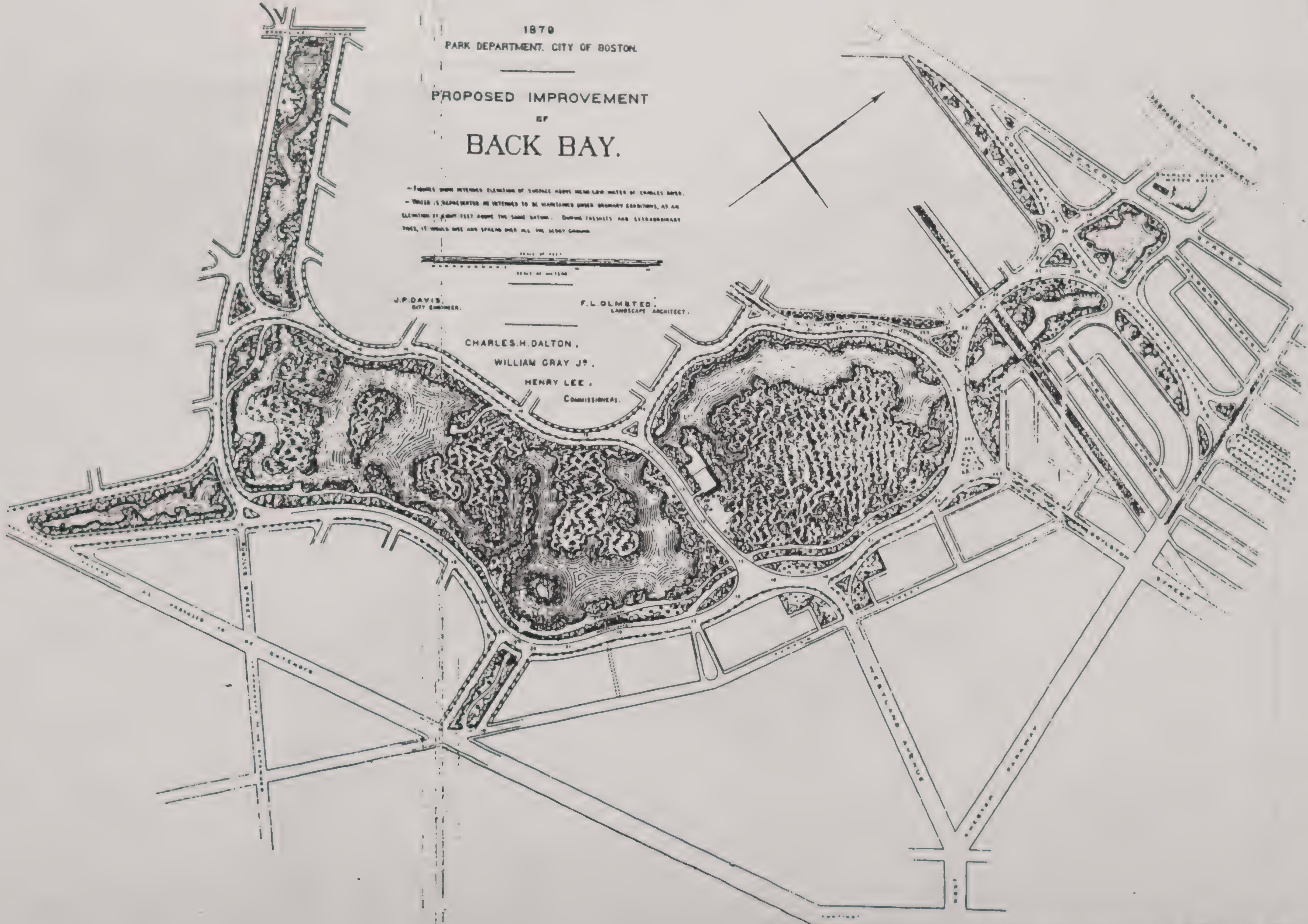
Plan of The Parkway between Muddy
River Gatehouse and Jamaica Park

Boston Parks Department
Frederick L. Olmsted & Co., Landscape Architects
December 1892



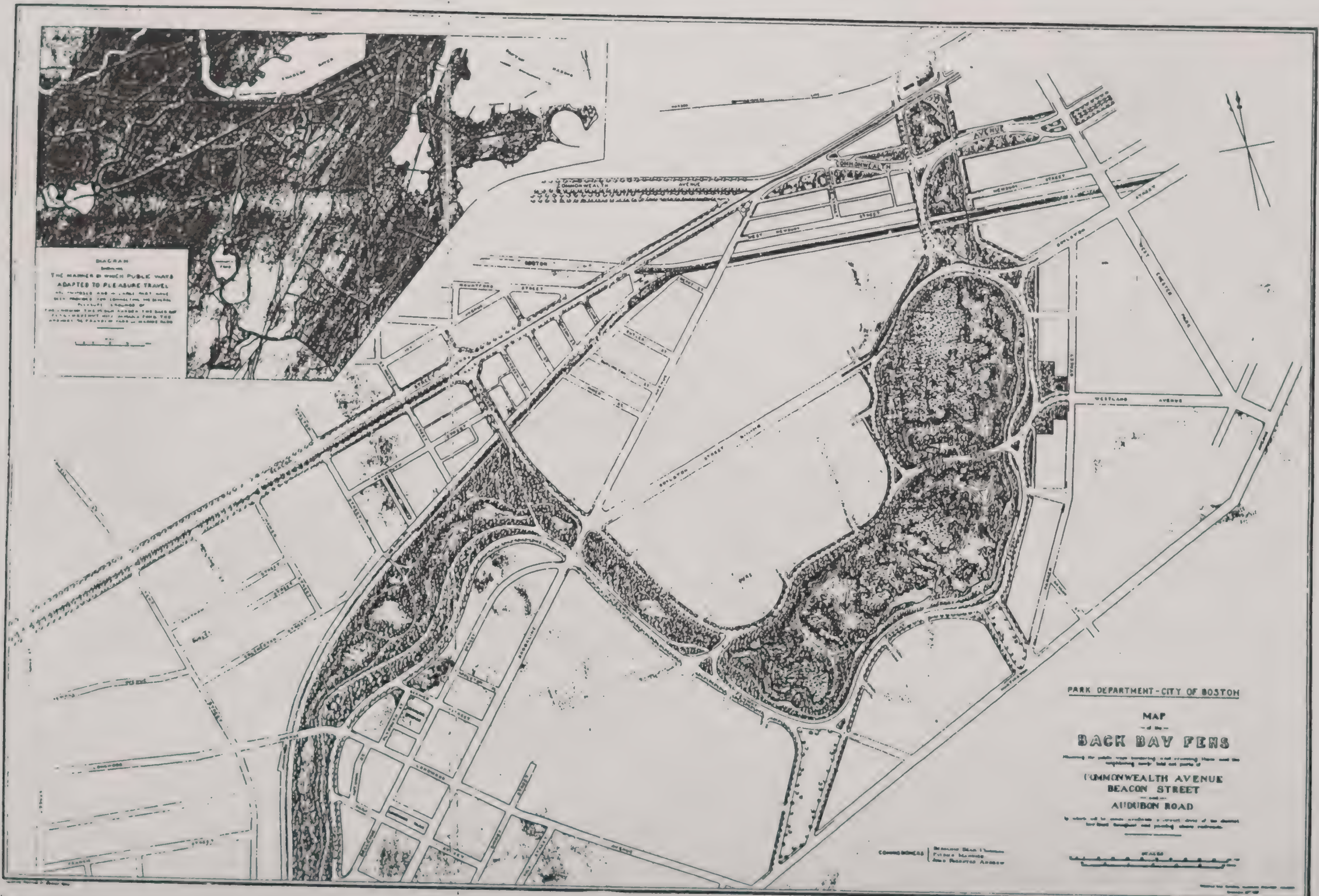
Olmsted Plans and Drawings .lection
Plan # 930-61A (right half)
Riverway Boston, MA
Topo Plan for Plating Study
F.L. Olmsted & Co. 1893
Plan # 176-339 Phillips Academy Andover,

Please Credit: Courtesy of the National Park Service, Frederick Law Olmsted National Historic Site


1879
PARK DEPARTMENT. CITY OF BOSTON.
PROPOSED IMPROVEMENT
OF
BACK BAY.
—Figures show intended elevation of surface above mean low water of Charles River.
—Water is represented as intended to be maintained under ordinary conditions, at an elevation of eight feet above the same datum. During freshets and extraordinary tides, it would rise and spread over all the sedgy ground.
Scale of feet
Scale of meters
J.P. DAVIS.
City Engineer.
F.L. OLMSTED.
Landscape Architect.
CHARLES.H.DALTON.
WILLIAM GRAY Jr.
HENRY LEE.
Commissioners.
BEACON
COMMONWEALTH
STREET
WESTLAND AVENUE
PARKWAY

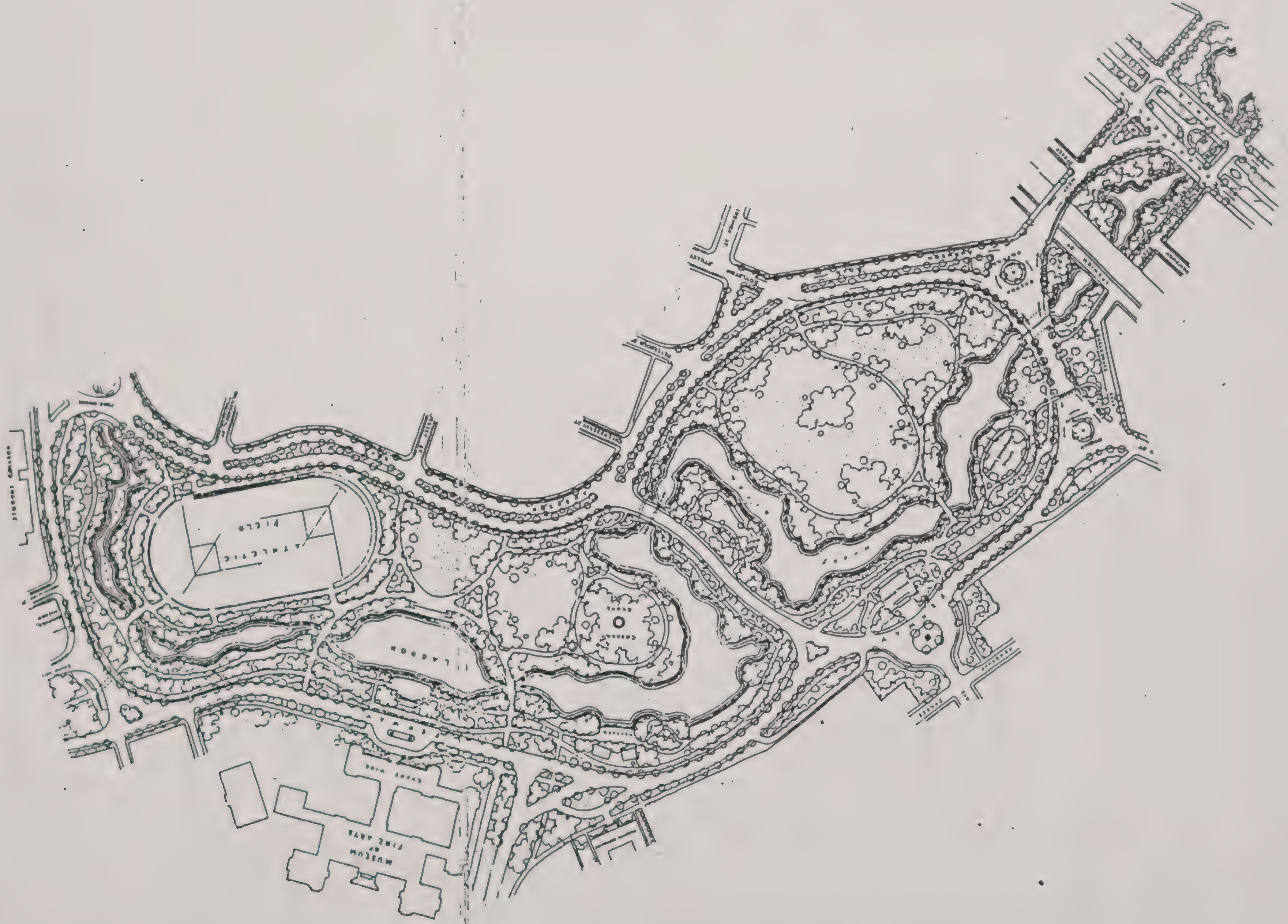
Proposed Improvement of Back Bay

Boston Parks Department



Map of the Back Bay Fens

Commonwealth Avenue, Beacon Street & udubon Road



General Plan for Back Bay Fens

Boston Parks Department
Arthur A. Shurtleff, Landscape Architect
1926

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – July 17, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome & Comments Received

Fredie Kay, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II Project Update

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

III Presentation: Historical Landscape Resources

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

Dr. Charles Beveridge
Historian, Olmsted Papers

Marion Pressley, FALSA, President
Pressley Associates, Inc.

Q&A with CAC

IV Questions and Answers (General Public) Wrap Up

V Fredie Kay Introduction of Susan Jeghelian, Massachusetts Office of Dispute Resolution

Summary

I Welcome & Comments Received

Fredie Kay opened the meeting and reminded CAC members to please contact John Burckardt and let him know if they will not be able to attend a specific meeting(s).

A CAC member expressed concern about CAC member attendance at this meeting and asked what effort the project team was making to ensure better attendance of CAC members at future CAC meetings. John Burckardt responded, stating that he has been calling CAC members in advance of each CAC meeting. He noted that many members are on vacation and there has been some turnover of CAC members, specifically the representatives from the Brookline Conservation Commission and the Charles River Watershed Association. Mr. Burckardt added that the Boston Parks Department will continue to call CAC members in advance to encourage their attendance at CAC meetings, and he noted as a reminder that CAC members not present will have CAC meeting summaries to refer to.

Mr. Burckardt also reminded CAC members of the letter from Kate Bowditch on best management practices that was distributed to all CAC members in the last mailing.

Mr. Burckardt reminded all present to complete the Sign-In sheet.

II Project Update

Bruce Conklin provided a brief project update summarizing the major activities the CDM team has been working on since the last CAC meeting on June 13, 2000. Specifically, Mr. Conklin updated progress on the following project tasks:

- The Boston and Brookline Conservation Commissions issued "Negative Determinations of Applicability with Conditions" regarding the sediment sampling plans, so this work can begin immediately.
- The topographic and wetland survey has been completed.
- Evaluation of dredging methodologies and identification of proposed staging areas has begun.

Mr. Conklin added that the following tasks will be initiated this coming month.

- Evaluation of dredging methodologies and proposed staging areas.
- Developing documentation on the existing conditions in the project area.
- Development of conceptual culvert designs.
- Wetland delineations submitted to Boston and Brookline Conservation Commissions for their review and approval.

III Presentation: Historical Landscape Resources

A copy of the presentation made by the CDM team is included as Attachment 2. There were a series of photographic slides that were presented by Charles Beveridge and Marion Pressley. A listing of all photographic slides included in Ms. Pressley's presentation is included as part of Attachment 3. In addition, photocopies of key slides are included in Attachment 3.

Mr. Conklin began the presentation and emphasized that the purpose of the presentation was to:

- Discuss the goals of historic treatment and habitat restoration.

- Inform the CAC of the preservation planning process that will result in development of an historic resource treatment plan.

- Obtain CAC views on the compatibility of historic treatment and habitat restoration.

Mr. Conklin summarized the presentation made at the June 13, 2000 CAC meeting on wildlife habitat. Mr. Conklin emphasized his understanding and impression that the CAC supports biodiversity and the removal of invasive species.

Mr. Conklin added that the Historical Landscape Resources presentation will highlight the compatibility of historic treatment and habitat restoration.

Mr. Conklin then discussed the regulatory controls (Wetlands Protection Act, historic preservation regulations and guidelines) that must be met for the proposed improvements to be implemented. He emphasized that the local, state and federal historic preservation regulations and guidelines will govern the treatment and restoration of the historic resources associated with the project.

Dr. Charles Beveridge then presented an overview of the historic resource investigation that he and Marion Pressley have conducted for this project. Dr. Beveridge reviewed and summarized the resources that are available to the project team, including original notes and plans of Frederick Law Olmsted and other landscape architects who have worked on the Emerald Necklace.

Dr. Beveridge referenced the 7 S's and explained how he developed these in 1981 as a way to define and understand Olmstedian principles of landscape design. Dr. Beveridge summarized scenery, suitability, space, style, subordination, separation and sanitation and how they properly characterize Olmsted's work. Dr. Beveridge further added that the 7 S's bring Olmsted's design ideas into a narrow focus and point of reference. He further explained that the Fens and Riverway still maintain many of the characteristics of the 7 S's.

Dr. Beveridge stated that the Emerald Necklace was implemented the way that Olmsted envisioned it to be implemented. Dr. Beveridge noted that the historic landscape reports and the number of plans that are still available are critical resources and proof that Olmsted's vision for the Emerald Necklace was largely implemented.

Dr. Beveridge added that he and Ms. Pressley have discovered additional resources that were not available when the last comprehensive historic resources study on the Emerald Necklace was completed in the 1980s by the Department of Environmental Management. Beveridge added that there is a wealth of information on the Muddy River, particularly for the Brookline side. He also added that there are planting plans for the Boston side although many are difficult to read.

Dr. Beveridge also discussed the grading plans that he and Ms. Pressley have reviewed. Many of the grading plans they have discovered in their research for this project were not available during previous studies, i.e. the DEM study in the 1980s. Dr. Beveridge then concluded that the grading plans are a significant resource that are available to this project that were not available on previous studies.

Marion Pressley then presented the findings of the historic resources investigation. Ms Pressley began by explaining that, in accordance with the Department of the Interior National

Park Service Guidelines, a complete inventory and analysis of the existing site conditions as well as the historical research and analysis of the site history are being completed simultaneously. This information will be documented to be included in the EIR and for use of the team during the design phase.

- Site history is inventoried, analyzed and documented to clearly identify and document the historic context and period(s) of significance of the landscape. It describes the physical character, features, and materials (the character defining features) that contribute to its significance.

- Existing conditions are inventoried, analyzed and documented to clearly identify and describe the landscape. A current survey document was prepared for the base showing contemporary site character defining features such as, topography, vegetation, vehicular and pedestrian circulation, buildings structures, wetland delineation, etc. Analysis includes documentation of appropriate detailed technical information such as plant material condition, erosion and drainage issues, vehicular and pedestrian path condition, etc.

At this point, Ms. Pressley presented an extensive series of photographic slides that included previous master plans, grading plans, lighting plans, planting plans and studies, as well as historical photographs of the Muddy River and adjacent parklands. A listing of each slide presented is included in Attachment 3.

A brief summary of the material is presented below for the four areas presented Olmsted Park, The Riverway, Back Bay Fens and Charlesgate.

Olmsted Park, including Wards, Willow and Leverett Ponds

Drawings inventoried include the survey prior to Olmsted's design (1881), the grading plans and studies (1889), design plan (lithograph rendering) (1892), planting plans and massing studies (1892), and lighting plans (1894). Plans with comments on design in general and planting specifically were prepared informally over the 1892 design plan in the early 1900s by member's of the Olmsted Office; specifically John Charles Olmsted, Warren Manning, and H. H. Blossom. Grading studies and grading plans prepared in 1898 and in the 1930s are also available for study, particularly in the Leverett Pond area. Plans also indicate that the water elevation of the ponds on the topographic plans was approximately two feet higher in Olmsted's Period than today.

Photographic information includes aerial photographs (1985) and site photos during the late 1890s and early to mid 1900s. The photographs document the open nature of the sites, path systems and site furnishings as first constructed, as well as, provide a record of the growth of the vegetation. All three of the ponds had designed edges, which included the "Olmsted beach" concept of open areas that allowed visual access and controlled views of the landscape. The beaches created a contrast of open lawn and densely planted edges. A system of lighting is also documented on drawings and photos.

The original planting plans and plant lists show a wide variety of trees, shrubs, vines, groundcovers, perennials and wetland association plants. Bio-diversity was very much a part of Olmsted's design. Ms. Pressley explained that for instance in the Ward's Pond today there are five major invasive plant species and the bio-diversity of the Olmsted planting design has been lost. Pressley Associates is working with LEC Environmental to evaluate the impacts of the invasive species on habitat.

Riverway, *including the Muddy River from Route 9 to the Fens Bridge at Audubon Road:*

Drawings inventoried include the survey prior to Olmsted's design (1881), the Olmsted grading plans (1890), design plan (lithograph rendering) (1892), planting plans and massing studies (1892 and 1893), and a grading plan between Brookline Avenue and the Fens Bridge at Audubon (1921) grading compiled by Arthur A. Shurtleff (Shurcliff). Plans with comments on design in general and planting specifically were prepared informally over the 1892 design plan in the early 1900s by member's of the Olmsted Office; specifically John Charles Olmsted, Warren Manning, and H. H. Blossom. Plans also indicate that the water elevation on the topographic plans was approximately two feet higher in Olmsted's Period than today.

In the Riverway section, Ms. Pressley showed how the Muddy River was significantly modified from the 1881 survey, which shows its earlier meandering course. The Muddy was totally reconstructed and included the "Olmsted beach" concept of open areas that allowed visual access and controlled views of the landscape. The beaches created a contrast of open lawn and densely planted edges.

Photographic information includes aerial photographs (1925, 1985,1991, & 1998) and site photos during the late 1890s and early to mid-1900s. The photographs document the site under construction and the path systems, plantings, grading, structures, and site furnishings as first constructed. Photograph documentation also provides a record of the growth of the vegetation 12 to 28 years after initial planting.

In the area of the Riverway that is today known as the Sears Park (formerly, the Sears parking lot), Olmsted designed the river as a wide-open water body. Photographic documentation is available, as well as, grading and planting plans by Olmsted showing the parkways, gate house, and bridge designed and constructed during the Olmsted Period. Neither this area nor the area from Brookline Avenue to the Fens Bridge at Audubon Road was modified during the Shurtleff Period. In fact, a 1921 survey compiled by Shurtleff documents the as-built condition from the Olmsted Period as it existed until the land was lost to the Sears Roebuck Company in 1958-59 for a parking lot. Modification of the Fenway, Audubon Road, and Brookline Avenue to add traffic lanes and the demolition of the bridge obliterated the entire Olmsted design, put the river in pipes, and reduced the original footprint of the park.

Back Bay Fens, *including the area from the Fens Bridge at Audubon Road to the Richardson Bridge at Boylston Street:*

In the Back Bay Fens, Ms. Pressley discussed how the most active planning has focused on the Back Bay Fens. This section of the project has two periods of significance: the Olmsted Period and the Shurtleff (Shurcliff) Period. Ms. Pressley summarized the different landscape master plans that were prepared for the Back Bay Fens and the development and modifications that have been implemented in the Fens over approximately the last 100 years. Ms. Pressley noted that the planting plans from Olmsted and Schurcliff have not been found.

Drawings inventoried include as series of design plans for the park during both the Olmsted and Shurtleff Periods. In the Olmsted Period these plans include the survey prior to Olmsted's design (1881), the design plan (master plan) by Olmsted (1879), grading plan for 1878, and the 1887 lithograph rendering for the park by Olmsted. The 1887 Olmsted lithograph for the Back Bay Fens is the design plan that illustrates the park as it was constructed. This is confirmed by a survey in 1902, revised in 1907, that shows the condition of the park after Olmsted's design. Planting plans have not been found yet.

The Shurtleff Period design plans include a 1921 Revised General Plan (which is actually a compiled survey of the site from the Olmsted Period), a 1926 General Plan for the Back Bay Fens and a series of studies for the Fens from 1912 to 1934 by Shurtleff for the filling for the athletic fields, for design of the lagoon at the Museum of Fine Arts, for the design of a playground, for filling and grading in the areas that becomes the Victory Gardens in the 1940s, and for the design of the rose garden, etc. A set of grading plans (eight), in addition to the compiled plan by Shurtleff in 1921 listed above, show an overlay of proposed filling studies, but also document the as-built condition of the Olmsted Period.

Also presented were the master plans for the Fens by Carol R. Johnson in 1977, and current master plan as established under the Department of Environmental Management program dated 1986 by Walmsley/Pressley Joint Venture.

Ms Pressley also presented two drawings that are analysis drawings that she has prepared. These drawings compare the shoreline as designed by Olmsted with the shoreline as modified by Shurtleff. She said that a similar analysis would be done comparing both periods of significance to today's shoreline to determine if the edges have integrity from either period.

Photographic information includes aerial photographs (1925, 1935, 1965, 1977, 1985, & 1997) and site photos during the mid- to late-1890s and early To mid 1900s. The early photographs document the character and natural systems of the site while it were still tidal. The path systems and site furnishings, as well as the surrounding roads and parkway system, are also documented and provide a record of the site as it was first constructed under Olmsted. The design of the original fen also included the "Olmsted beach" concept. In the tidal Back Bay Fens gravel paths went down to the water and broaden out providing the same contrast of open edges (beaches) and densely planted edges, rather than the grass beaches of the Olmsted Park and Riverway. Photos also document the filling and grading from 1910 to 1920s during the Shurtleff Period and the design as constructed during the 1920s, 1930s and 1940s.

Photos also document the filling and grading from 1910 to the 1920s during the Shurtleff Period and the design as constructed during the 1920s, 1930s and 1940s.

Charlesgate form the Richardson Bridge at Boylston Street to the Charles River:

Ms. Pressley then focused on the Charlesgate area and reviewed the modifications to the river, streets, and the adjacent parkland that have been implemented over the years.

Drawings inventoried during the Olmsted Period include early design drawings and preliminary design plans (1878 & 1879), Revised Plan for Beacon Street Entrance (1882), a planting plan for the area (1884), and the Map of the Back Bay Fens, a lithograph rendering (1887). It should be noted that the 1884 plan is the only planting plan for the Fenway area that we have located. Plans from 1897 through 1899 show modifications to the street and culvert and gate design.

Drawings inventoried during the Shurtleff Period are design plans from 1912 to 1936 including design, grading, and planting, with the 1912, 1923 and 1931 plans that were shown at the CAC meeting being the most informative.

Drawings inventoried from 1949 through 1957 document the major changes that occurred as modifications were made to the Charlesgate interchange with Storrow Drive and the construction of the Bowker overpass. This construction had a major impact on this section of the park and its relationship to the Charles River. The road configuration and water edges from the Shurtleff Period partially remain. The planting, however, was modified at this time and has no integrity for either period of significance.

Photographic documentation gathered to date and shown at the CAC meeting is limited. Photographic documentation of the Olmsted Period is limited to the mid-1890 and documents the watercourse and the street layout at Commonwealth Avenue. For the Shurtleff Period, the 1930s modifications by Shurtleff are documented. A pair of pictures 1924 and 1980 documents the modifications during the construction of the Storrow Drive Interchange.

Emerald Necklace Master Plan 1990 *form Back Bay Fens, Riverway and Olmsted Park:*

Ms. Pressley then discussed the planning process regarding the most recent, 1990 Emerald Necklace Master Plan and how that planning process was different than the planning process that is required today by federal and state regulations and guidelines. Specifically, Ms. Pressley summarized the National Park Service's guidelines and regulations for historic treatment, planning and implementation with which the Muddy River project will comply.

Mr. Conklin concluded the consultant's presentation and emphasized that the project team will create a historic resources treatment and restoration conceptual plan for the entire Muddy River. All engineered improvements to the River will be done in the context, and consistent with, the conceptual plan.

Q&A with CAC

What is the applicability of the 1990 Emerald Necklace Master Plan as a base given the additional historical resources information that the CDM team had found?

Ms. Pressley responded that the 1990 Master Plan will still be the base line, but that the regulations and guidelines, particularly the National Parks Services' guidelines, as well as the wetland regulations, must also work into the equation. In the NPS guidelines, for example, the both the primary and secondary periods of significance are identified, but the guidelines also respect the continuum of the site.

What will the project team try to design to based on the new information that has been discovered?

Ms. Pressley responded that the project team would respect the continuum of the site, but that the primary and secondary periods of significance will also be a goal. The information gathered in many cases reinforces, confirms, and supplements information gathered during the master planning.

Are we committed to restoring back to Olmsted's original plans?

Ms. Pressley responded that the amount of landscape work under this phase depends on what the engineers determine are the improvements necessary to meet the project goals, particularly the flood control goal. This will determine the limits of disturbance under this phase. Landscape work will be done within the limits of disturbance.

The 1990 Master Plan should be augmented with the additional information that Dr. Beveridge and Ms. Pressley discovered. Secondly, the driving force of the project should be historic restoration with flood control as one of the secondary goals and priorities of the project. Furthermore, historic restoration improvements should not be sacrificed as cost cutting measures if the proposed improvements cost more than the funds available.

Ms. Pressley responded that the 1990 Plan will be the guideline. The historic restoration issues will be integrated with the engineering in an iterative process that will result in the most historically appropriate and effective improvement measures for both historic restoration and flood control. It should be noted that the areas that will be restored include the actual construction areas, the staging areas, and the areas or for access. When construction work is done, it will include the historic restoration of the disturbed areas, and this work will occur after flood control and engineering work is constructed. The historical landscape restoration will be part of the scope of work and not an alternate to be included if funds are available.

How does the resource information (historic, habitat) integrate with the evaluation of engineered improvements? Secondly, it would be very helpful if the CAC had a better understanding of the existing conditions of the natural resources.

Ms. Pressley commented that there is a considerable amount of integration within the project team regarding the study of the resource areas and that the analysis and recommended improvements will reflect the integration of history, ecology and engineering issues. Both LEC and Pressley are evaluating the condition of the natural resources including invasive species. Plant lists from the Olmsted design are being studied by LEC and a list of the historical plants that also provide wildlife habitat value is being prepared.

A concern was expressed that the CAC will be overwhelmed with information and analysis to review when all of this material appears in the Draft and Final Environmental Impact Reports (EIRs).

Mr. Conklin responded that the project team is sensitive to this issue and hopes that the CAC meetings are helping to convey at least some of the information and analysis to CAC members so they don't experience an information overload when the time comes to review the Draft EIR.

A concern was expressed regarding the engineering process and how the engineering evaluations are being conducted. The historic resources issues and needs should shape the nature and scope of the proposed engineering improvements.

Mr. Conklin emphasized that there is ongoing, integrated evaluations going on between the project team members.

A CAC member commented that the project team should examine the "mistakes" of Olmsted's plan and try to improve upon those aspects of his plan that have not worked as intended. Also, what is the period of significance that will be used to guide the development of the historic resources treatment and restoration conceptual plan?

Ms Pressley responded that certainly the planting of some species of plants, which have proven over time to be invasive, would be left off the restoration plant lists. River Birch for instance that has become an invasive species at Jamaica Pond would not be planted in other areas. The general design by Olmsted is still a superior design including circulation systems, topography, structures, etc., which has been impacted by "modern improvements" such as road widening and takings for active recreation or parking for Sears.

Ms. Pressley responded that the project team does not yet know what the period of significance will be, but that the team will follow the National Park Service's guidelines.

What period of significance is the project leaning to?

Ms. Pressley said that the project team has not yet fully analyzed this issue. For Olmsted Park and the Riverway, the Period of Significance is the Olmsted Period, whereas, for the Back Bay Fens there is a primary and secondary period of significance. The Primary Period is the Olmsted Period and the Secondary Period is the Shurtleff Period. However, as with the 1990 Master Plan, the continuum for later designed areas in the Back Bay Fens, such as the Victory Gardens and War Memorials, will be respected in the Back Bay Fens.

A CAC member commented that the cultural landscape of the resource area has to be considered when determining the period of significance. The historic landscape should also serve as the basis for each of the engineering alternatives. For example, the scale, materials, design of improvements should complement the historic resources. On the Fens Bridge, for example, the restoration of that bridge should be conducted in such a way that it restores the bridge to its original design or at least restored in a way that is consistent with its original design.

Mr. Conklin responded that all engineering alternatives considered will have historical integrity.

The engineering technologies used as part of the recommended improvements should be out of sight to the extent possible and the historic restoration improvements should be what the public sees from the completed project.

A CAC member commented that the historic resources plan that is developed should be sustainable and maintenance requirements should be considered to insure that the *improvements can be easily maintained. If we only performed better maintenance, we would likely have more of Olmsted's original plan in place.*

A CAC member asked how the changes to the Charles River with the development of the dam, affected Olmsted's plan?

Ms. Pressley said that the Charles River Dam changed the Muddy River from a salt to a fresh water environment, therefore, effecting the plant material species that could survive in the changed conditions. It also resulted in the redesign of the park by Arthur A. Shurtleff. The new design called for major filling in the Fens for the addition of active recreation areas in the previously passive park, and a redesign of the circulation system in the park.

IV Questions and Answers (General Public) Wrap Up

Based on the information gathered from the planting plans, are there priorities about what historic resources need to be fixed/improved.

Ms. Pressley responded that the 1990 Master Plan prioritized the improvement needs. On this project, however, there are a number of priorities that need to be properly balanced to meet the multiple objectives of the project. The historic, ecological and engineering issues are all part of the picture. As stated earlier, the work will include the historic restoration of the areas after flood control and engineering issues are designed and constructed, including areas disturbed by staging and construction. The priority is that all disturbances be restored.

The historic planting plans provide the location and species selection from the Olmsted Period, but as stated earlier, we need to remove, from these lists plants, that we now know are invasive. We are also working with LEC to review the Olmsted lists to determine species from the historical plant lists that provide wildlife habitat value.

How will the uses of the Emerald Necklace Park System (focusing on the Muddy River) be evaluated in the context of the alternatives evaluations?

Ms. Pressley responded that the historical recreational uses of the Muddy River will be examined. The targeted post-improvement water level of the river may be an issue for the users of the Emerald Necklace.

As an example, we know that the water elevation today in Leverett Pond is two-foot lower than the elevation shown on the Olmsted plans. There is also a question of how much and in what areas boating occurred during the Olmsted Period. How did one bring a boat to the river and how did one actually get a boat into the water? Photographs of the site show limited boating use, but plans and at least one photograph show the location of a boating dock at Sears Park. Historic photographs are also taken on a boat in the water.

How will the tradeoffs, which are necessary in order to meet the multiple objectives of the project, be evaluated and determined?

Ms. Pressley responded that this is a critical question, particularly in the Back Bay Fens section. Ms. Pressley emphasized that the National Park System guidelines require that we analyze the integrity of the historic character defining features and determine the appropriate treatment for the landscape based on integrity as a major objective. However, we always need to keep in mind flood control and ecological concerns and needs, as well as, the continuum of the design of the landscape.

On the Brookline side of the River, what parkland areas will be restored? The mature trees that line the parkland area provide an excellent screening between the river system and the urban environment of Boston and Brookline. The trees, while maybe not part of Olmsted's original plan, are an important part of people's experience along the Muddy River today.

Another CAC member responded that many of the trees in the Leverett Pond area are in bad shape and should be removed.

Ms. Pressley responded that the parkway trees were definitely part of the Olmsted design for the park and parkways and are also an important issue in the 1990 Master Plan. In most cases, however, the trees fall within the MDC right-of-way and are under their care and control. She also stated that the health of the trees within the parks is being evaluated during this project.

Consultant Presentation Conclusion –

Mr. Conklin concluded the project team's presentation by asking the CAC the following question: "Does the CAC agree that the EIR planning should be based on using the 1990 Master Plan as a guideline incorporating subsequent regulations and removing invasive species to achieve the compatible goals of biodiversity and historic preservation."

CAC members agreed with the principle of the statement, but felt that additional elements needed to be added. To respond to the question, the CAC agreed to the following affirmative statement:

The CAC agrees that the EIR planning should be based on using as a guideline the 1990 Master Plan augmented by new information incorporating subsequent regulations, removing invasive species and taking other necessary actions to enhance the compatibility of biodiversity, historic preservation and sustainability.

It was agreed that a draft of this statement would be circulated to the CAC for comment. Based on CAC comments received, a second draft would be mailed to the CAC prior to the next CAC meeting (August 22nd). At the beginning of the August 22nd CAC meeting, the CAC would decide if there were consensus in favor of the statement.

[Note: All CAC members should review the above statement and send any comments to John Burckardt prior to the August 22nd meeting.]

V Fredie Kay Introduction of Susan Jeghelian, Massachusetts Office of Dispute Resolution

Fredie Kay informed the CAC that due to family commitments she is resigning from her position as Executive Director of the Massachusetts Office of Dispute Resolution. Therefore, Ms. Kay will no longer serve as the CAC's Facilitator. Ms. Kay thanked the CAC for the pleasure of working with them.

Ms. Kay then introduced Susan Jeghelian from the Massachusetts Office of Dispute Resolution who will replace Ms. Kay as the CAC's Facilitator beginning with the August 22, 2000 CAC meeting.

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for **Tuesday, August 22, 2000.** *Location will be the **Egan Center at Northeastern University** (end of Forsyth Street, adjacent to the Ruggles MBTA station).* The meeting topic will be Staging Areas/Vehicular Traffic and Pedestrian Issues.

Enclosures:
Attachment 1 – Sign-In Sheet
Attachment 2 – CDM Consultant Team Presentation
Attachment 3 – Listing of Slides from Mr. Beveridge and Ms. Pressley's Presentation, including copies of key slides.

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

July 17, 2000

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Mary	Crain Penniman	Charles River Watershed Association	
Edward	Cutler	Brookline Resident	Ed Cutler
Margaret	Dyson	Historic Massachusetts	Margaret Dyson
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	Frances Allou Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	George Hagerty
June	Hatfield	Boston GreenSpace Alliance	
Richard	Heath	~~Franklin Park~~	Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	

Emerald Necklace Citizens Advisory Committee

Meeting

July 17, 2000

Sign-In Sheet

Name		Affiliation	Signature
Frances J.	Kemp	FCA Friends of the Muddy River Fenway resident	Frances J. Kemp
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	Arleyn A. Levee
John A.	Martin	Emerald Necklace Conservancy	John A. Martin
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	Paul Mentag
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

July 17, 2000

\parksmall\ocepark\Muddy\CAC Meetings\CAC-7 July 17, 2000\[Muddy R CAC Sign-in (CAC-7, 7-17-00).xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Paul Demit	CDM	452-6546	demitpe@cdm.com
PAUL LEZITO	LEC	508-759-0650	lecenv@liac.net
Megan Raymond	LEC	"	"
CHARLES BEVERIDGE	OLMSTED PAPERS	202-885-2832	
Anne Covert	141 Monmouth Court Brookline		
Jan Henderson	MASCO/375 Longwood Ave	632-2762	Henderson@MASCO.Harvard.edu
Patrice Kish	DEM	973-8762	patricekish@state.ma.us
Betsy Shure Gross	EOEA	626-1117	bshuregross@state.ma.us
John Furlong	Brookline		furlong@radcliffe.edu
David Noonan	CDM	617-452-6275	NoonanDC@CDM.com
David A. Mendelsohn	EOEA/DEM	617 973-8772	David.Mendelsohn@State.MA.US
Erin Chute	Brookline Conservation	730-2088	erin_chute@town.brookline.ma.us
Frances Shedd Fisher	Olmsted Design Review Comm., Brkline	566-1237	Fsheddfisher@aol.com
Anthony Reed	Olmsted NHS	566-1689x242	anthony_reed@nps.gov
Simone Auster	Emerald Necklace Conservancy	722-9823	SAuster829@aol.com
Mark Swartz	Frederick Law Olmsted NHS	566-1689x226	Mark_Swartz@nps.gov
ALAN BANKS	FL. OLMSTED NHS	566-1689x221	ALAN_BANKS@nps.gov
ROBERT CANTERBURY	AUDUBON CIRCLE NEIGHBORHOOD ASSOC.	262-4028	RBCANT@EARTHLINK.NET

Emerald Necklace Citizens Advisory Committee

Meeting

July 17, 2000

Sign-In Sheet

\\parksmail\bospark\Muddy\CAC Meetings\CAC-7 July 17, 2000\[Muddy R CAC Sign-in (CAC-7, 7-17-00).xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
William Pressley	432 COLUMBIA Camb.	491-5300	bpressley@Pressley in
Bob McDonnell	N.U. 26 TAVERN Rd. BOSD	373-5330	
Arlene Mattison	209 Pond Ave Brookline 02445	232-6083	
Maureen Twombley	Northeastern University	373-2340	mtwombly@ lynx.neu.edu
Walter L Noyes	Costello Assoc. Waltham	781 890-3737 x128	Costello@Costell .Com
Susan Jeshelian	MODR Boston	x21174 617-727-2224	susan.jeshelian @state.ma.us
John Burckardt	CB/Boston Parks	617-635-4505	jburckardt@ci.boston.ma.
Fran Beatty	Boston Parks		
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Harrison Pressley	PA	617 491-5300	
Janice Miller	FORMER FENWAY RESIDENT 14 ROSELAND ST DOT.		jamiller@lynx.neu edu

MEMORANDUM

DATE: August 15, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**; Other Information

NOTE MEETING LOCATION!

Tuesday, August 22, 2000

5:45 p.m. Refreshments

6:00 p.m. Presentation & Discussion

8:30 p.m. Adjourn

Northeastern University
Egan Engineering /Science Research Center
Forsyth Street (next to Ruggles Station)
Raytheon Amphitheater — Room 240

~ ~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~ ~

Agenda Topics: Staging Areas; Pedestrian & Traffic Issues

- ***Possible Staging Areas*** *including advantages and disadvantages.*
- ***Pedestrian and Vehicular Traffic Issues*** *during construction.*

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or e-mail jburckardt@ci.boston.ma.us.

Other Attachments:

1. Draft of Statement from last CAC Meeting. (Yellow Page)
2. Read-ahead assignment for CAC Meeting on August 22, 2000.
3. Meeting Summary, CAC Meeting of June 13, 2000.
   Please review. Submit written comments within 7 calendar days John Burckardt by fax (617-635-3256) or e-mail (jburckardt@ci.boston.ma.us) The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.
4. Handouts on Historic Resources from CAC Meeting, July 17, 2000.
   - *The 7 S's: Toward a Definition of Olmstedian Principals of Design*
   - *Samples of Historic Plans*

Draft Statement from CAC Meeting of July 17, 2000:

As drafted by CAC at the Meeting of July 17, 2000:

The CAC agrees that the EIR planning should be based on using as a guideline the 1990 Master Plan augmented by new information and incorporating subsequent regulations, removing invasive species and taking other necessary actions to enhance the compatibility of biodiversity, historic preservation and sustainability.

Final Proposed Rewording:

The CAC agrees that the wildlife habitat and historic landscape treatment planning for the EIR should be ~~based on using as a~~ guided by guideline the 1990 Master Plan augmented as follows:

- Include new information obtained by the consultant team, CAC, and others;
- Incorporate subsequent wetland and historic resource regulations;
- Include removal of invasive species; and
- Include other necessary actions to enhance the compatibility of biodiversity, historic preservation and sustainability.

Reasons for revisions:

1. *Comment:* One CAC member expressed confusion over the reference to the 1990 Master Plan instead of the more recent 1999 "plan" (as described in the 1999 Environmental Notification Plan [ENF], which includes flood control work.
   Response: The term "planning" was modified by the addition of the modifiers "wildlife habitat and historic resources treatment."
2. *Comment:* The sentence is long and grammatically awkward.
   Response: The sentence was restructured, and a bullet list was added.
3. *Comment:* The original wording did not limit the new information to that which is obtained by the consultant.
   Response: The words "CAC and others" was added.

Emerald Necklace Citizen's Advisory Committee
Northeastern University, Egan Engineering /Science Research Center
Raytheon Amphitheater — Room 240

Tuesday, August 22, 2000
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:10

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*
***John Burckardt**, Project Manager*

II. Project Update 6:10 – 6:20

***David C. Noonan, P. E.**, Vice President*
Camp Dresser & McKee Inc.

III. CAC Discussion of Statement on Habitat & Historic Treatment 6:20 – 6:35

***Susan Jeghelian**, MA Office of Dispute Resolution,*
Facilitator

IV. Presentation: Staging Areas; Pedestrian & Traffic Issues 6:35 – 7:25

***David C. Noonan, P. E.**, Vice President*
Camp Dresser & McKee Inc.
***James H. Winkler, P. E.**, Manager of Design*
Camp Dresser & McKee Inc.
***Joseph Wanat, P. E.**, Transportation Engineer*
VHB, Inc.

Q&A/Discussion with CAC 7:25 – 8:20

V. Questions and Answers (General Public) Wrap Up 8:20 – 8:30

Camp Dresser & McKee

Muddy River Restoration Project

Staging Areas; Pedestrians and Traffic

August 22, 2000

Dave Noonan, P.E., CDM
Jim Winkler, P.E., CDM
Joe Wanat, P.E., VHB

Citizens Advisory Committee Presentation

**Emerald Necklace Environmental Master Plan
and Phase 1 Muddy River Flood Control,
Water Quality and Habitat Enhancement**

Objectives

- Review preliminary construction alternatives
- Review potential staging area locations and pedestrian and traffic considerations

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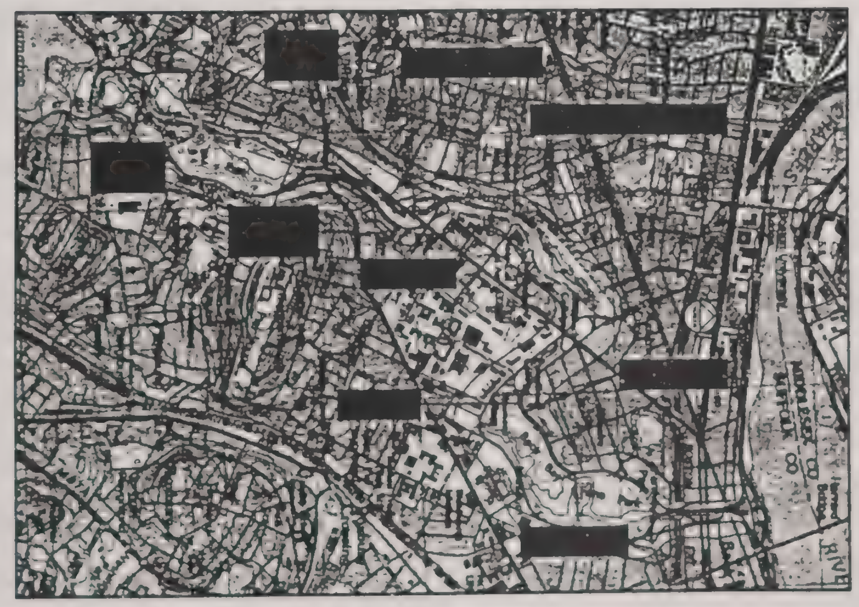
Muddy River Restoration Project Location of Work



Construction Alternatives

- Hydraulic Dredging
- Mechanical Dredging
  - Excavator
  - Crane with environmental bucket
- "In the dry" or open Excavation
- Pipe Jacking

Construction Alternatives Evaluation Criteria

- Neighborhood traffic impacts
- Odors/Noise
- Bridge and other height constraints
- Truck traffic
- Pedestrian Circulation
- Bank disturbance/Habitat
- Historic Resource
- Park Use

Construction Alternatives Evaluation Criteria (continued)

- Cost
- Duration
- Safety, Security and Emergency Access
- Effect on staging area locations and sizing

Description of Hydraulic Dredging Alternative

- "Vacuum cleaner" on a barge
- Dredged material is collected through moveable mechanical arm
- Dredged material is pumped from barge to staging area
- At staging area, water is removed
- Water is filtered and discharged back into river
- Dewatered dredged material is hauled off site in sealed and covered 18-wheel trailer dump trucks

Hydraulic Dredge Barge

Hydraulic Dredging Alternative Staging Area Description

- Minimum dimensions 100 ft. by 300 ft.
- Belt filter presses mounted on 18-wheel flatbed trailers
- Sedimentation tanks
- 18-wheel dump trucks
- Diesel generators
- Field trailers
- Processing time varies depending on number of belt filter presses in use

Description of Mechanical Dredging Alternative

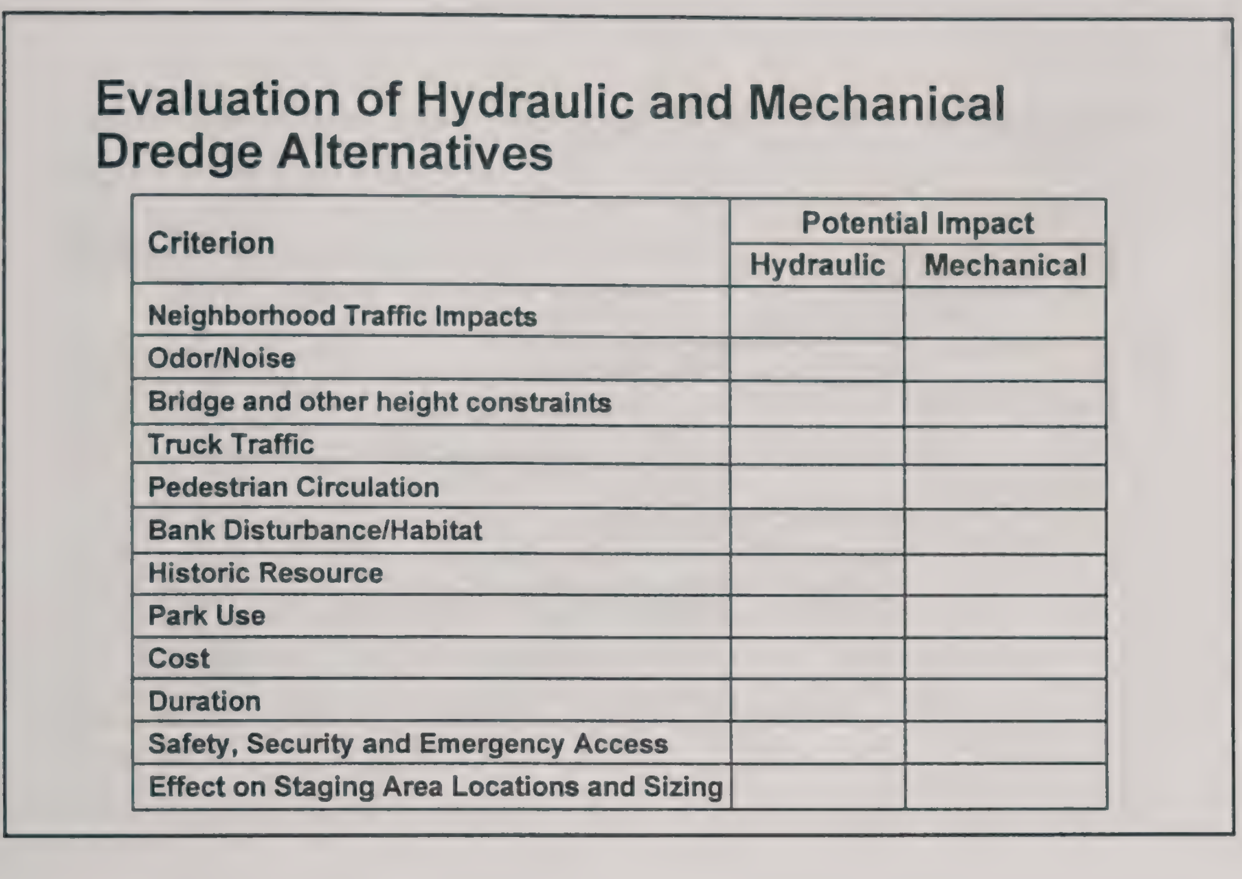
- Medium size barge with either a mounted crane or excavator
- Crane with environmental bucket
- Excavator has open top bucket
- Requires temporary unloading area to transfer dredged material from barge to "water tight" 10-wheel dump trucks
- Dump trucks haul dredged material to staging areas
- Dredged material is dewatered in contained stockpile areas
- Dewatered dredged material is hauled off-site in sealed and covered 18-wheel trailer dump trucks

Barge-mounted Crane

Barge-mounted Excavator

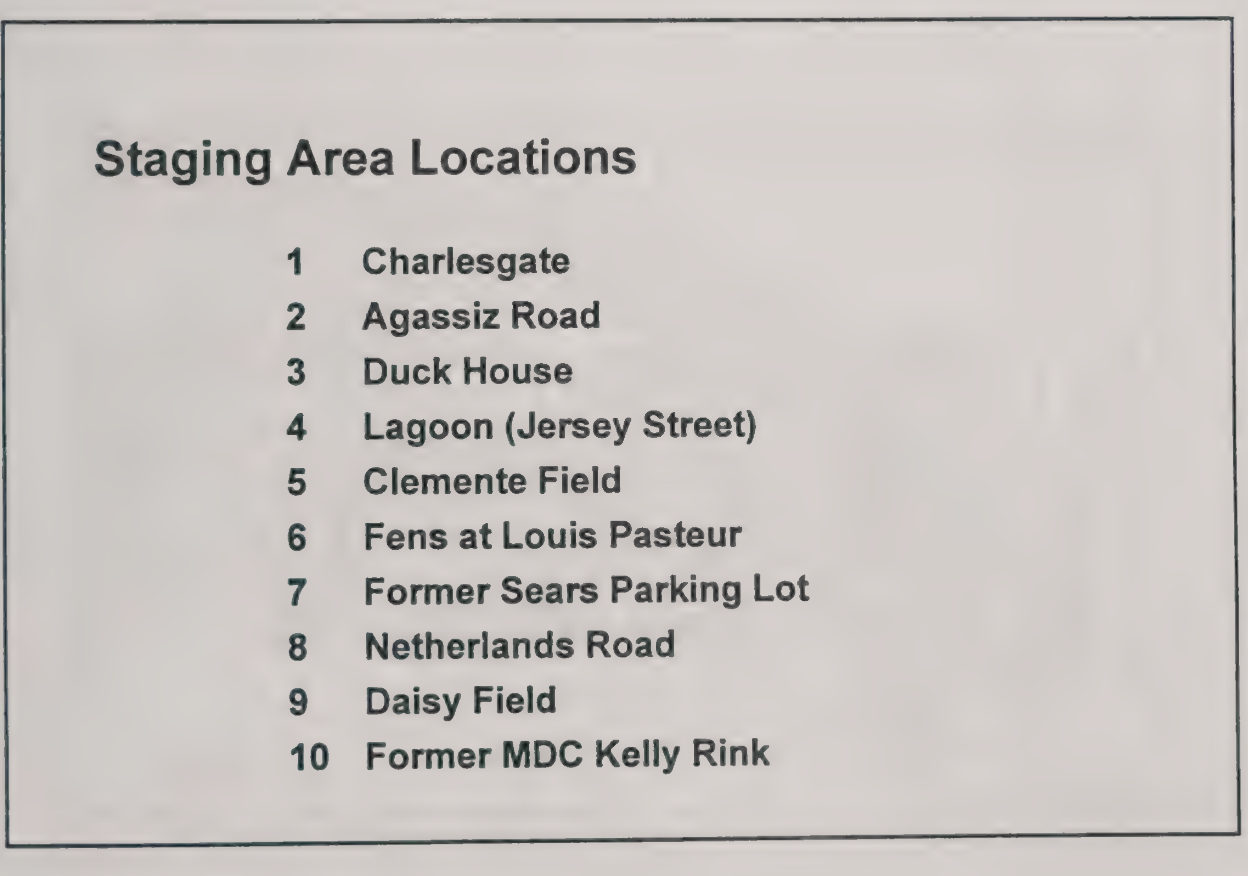
Mechanical Dredging Alternative Staging Area Description

- A minimum of 10 staging areas at all times
- Each staging area the size of an "oversized" football field
- Dredged material to be deposited within a contained stockpile area
- Drying time will vary from 9-18 months



Evaluation of Hydraulic and Mechanical Dredge Alternatives

Criterion	Potential Impact	
	Hydraulic	Mechanical
Neighborhood Traffic Impacts		
Odor/Noise		
Bridge and other height constraints		
Truck Traffic		
Pedestrian Circulation		
Bank Disturbance/Habitat		
Historic Resource		
Park Use		
Cost		
Duration		
Safety, Security and Emergency Access		
Effect on Staging Area Locations and Sizing		



Staging Area Locations

1 Charlesgate
2 Agassiz Road
3 Duck House
4 Lagoon (Jersey Street)
5 Clemente Field
6 Fens at Louis Pasteur
7 Former Sears Parking Lot
8 Netherlands Road
9 Daisy Field
10 Former MDC Kelly Rink

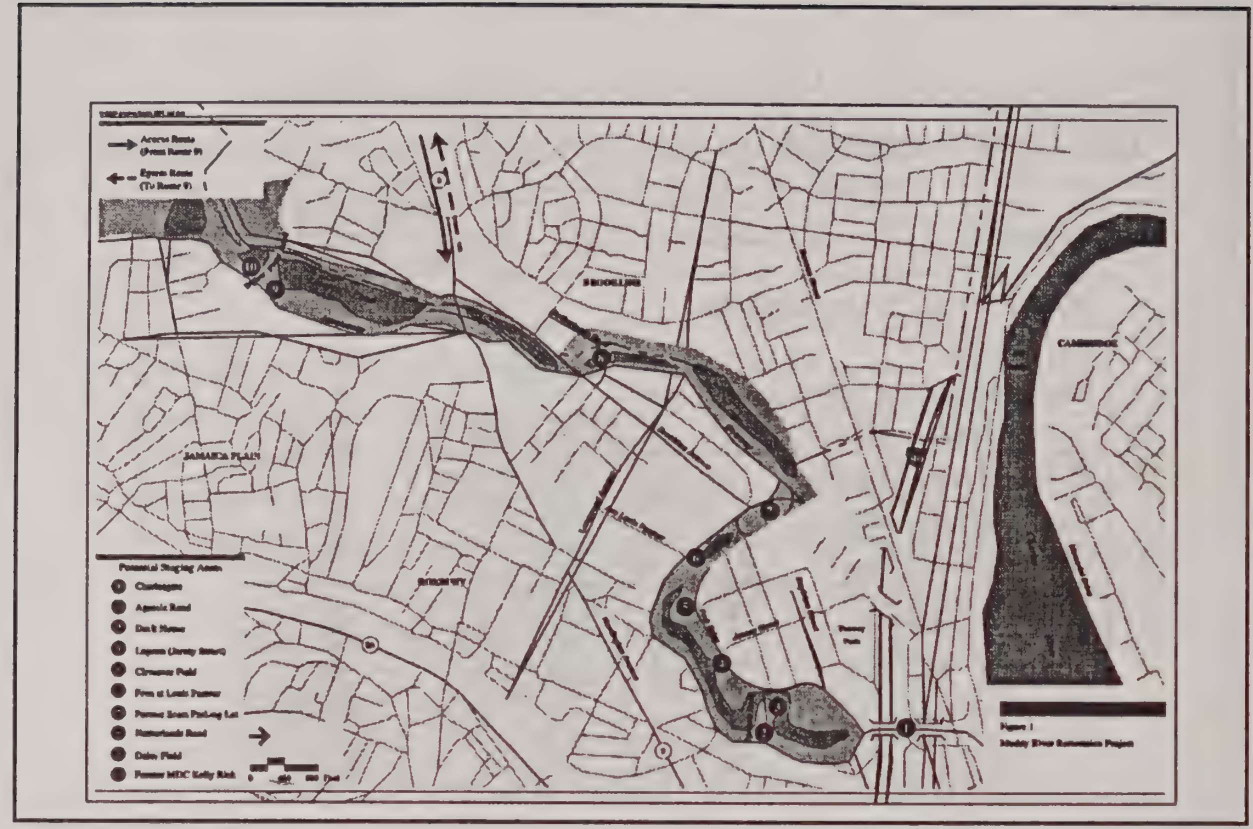


Figure 1
Muddy River Restoration Project

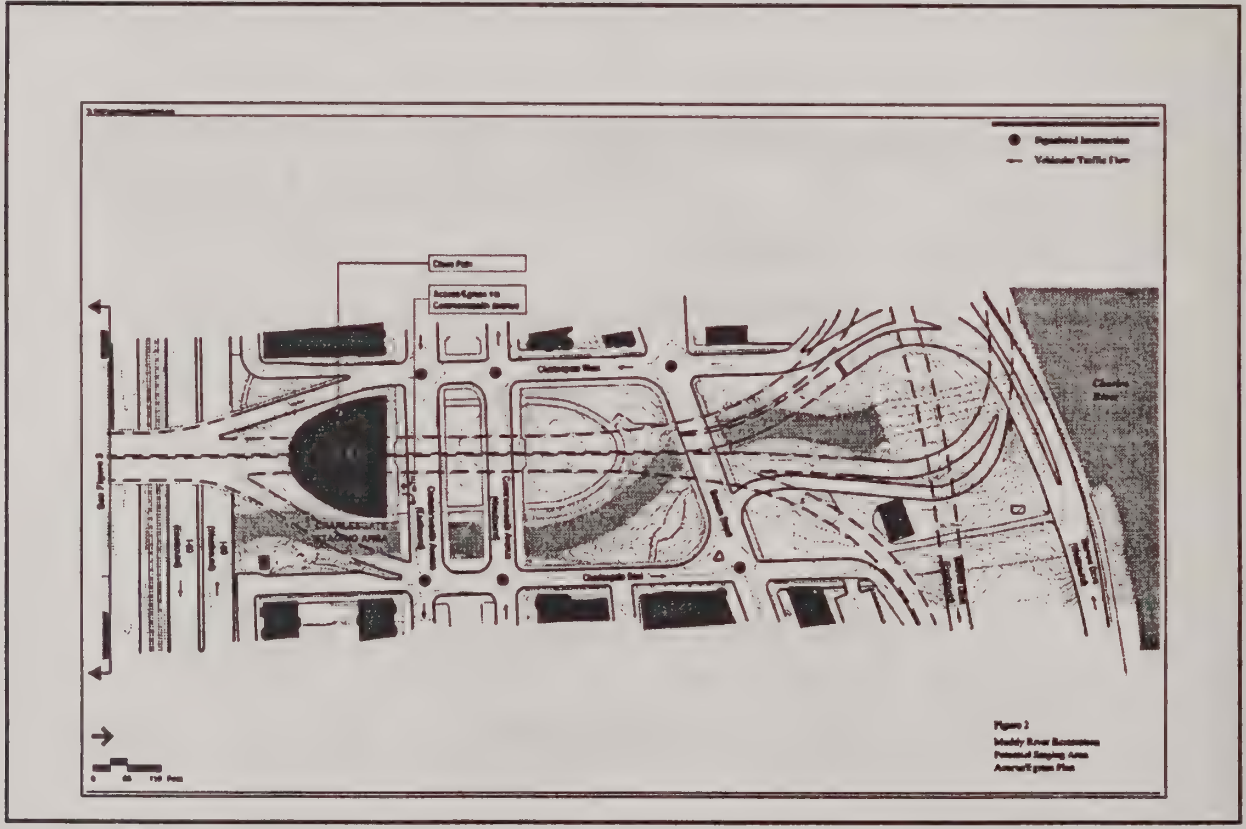
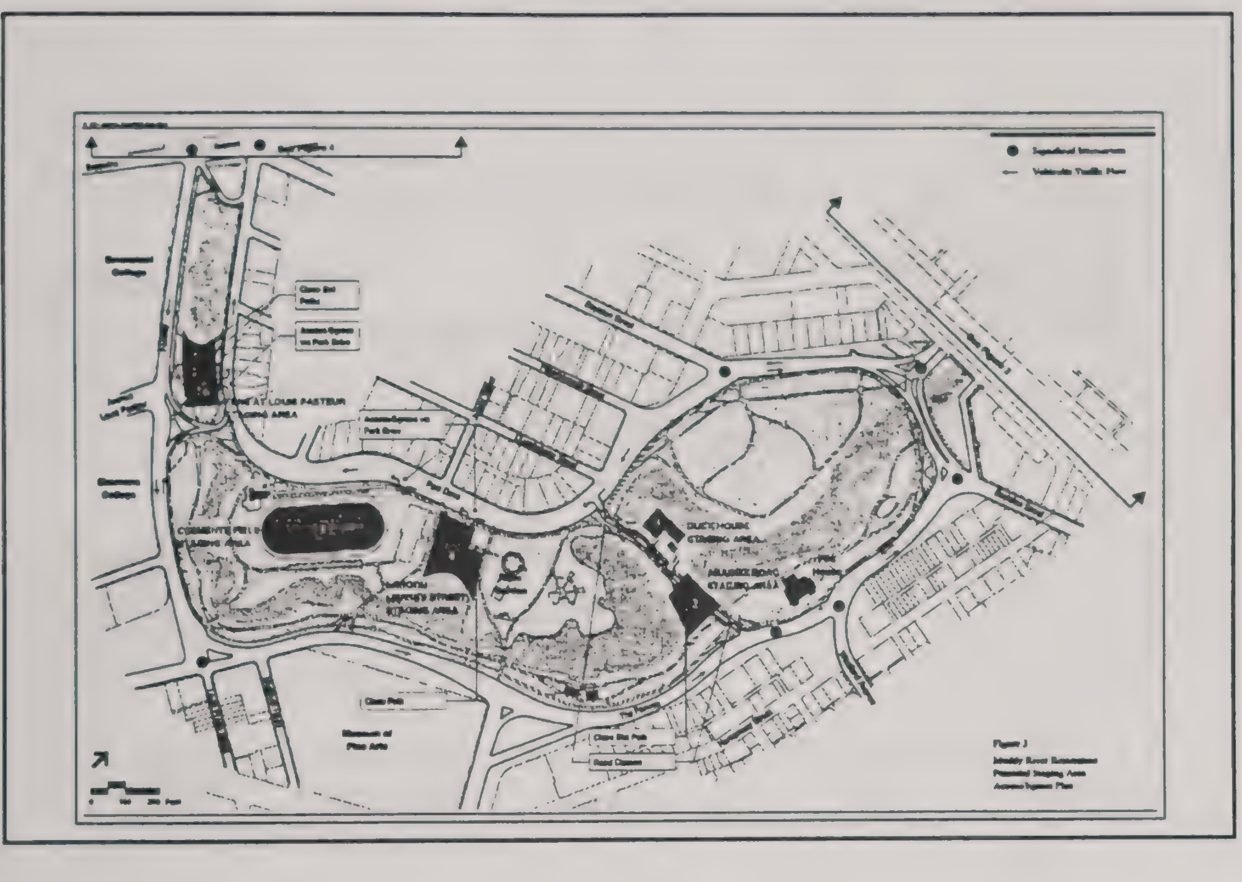
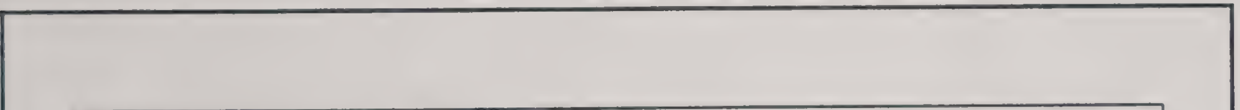
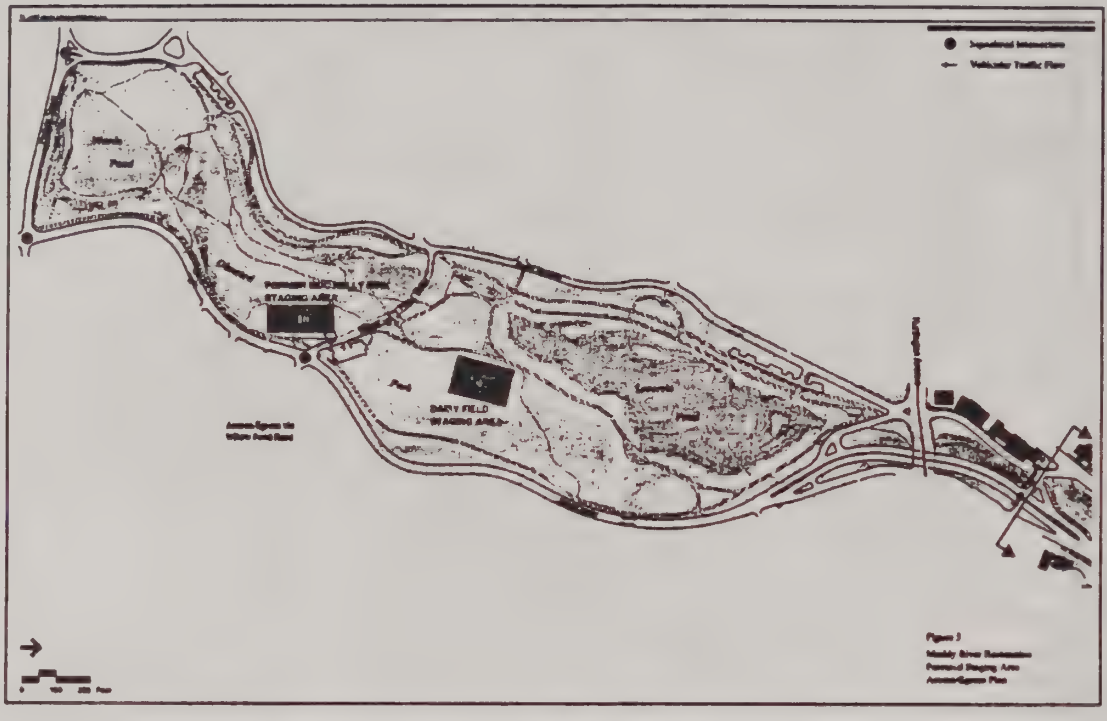


Figure 2
Muddy River Restoration
Potential Staging Area
Access/Egress Plan


Signalized Intersection
Vehicular Traffic Flow
Close Dirt Path
Access/Egress via Park Drive
LOUIS PASTEUR
STAGING AREA
Park Drive
STAGING AREA
DUCKHOUSE
STAGING AREA
STAGING AREA
Close Path
Museum of Fine Arts
Close Dirt Path
Road Closure
Figure 3
Muddy River Restoration
Potential Staging Area
Access/Egress Plan


Signalized Intersection
Vehicular Traffic Flow
Access/Egress via Park Drive
Close Dirt Path
Construct Temporary Path
Wheelock College
STAGING AREA
Landmark Center
Figure 4
Muddy River Restoration
Potential Staging Area
Access/Egress Plan



Questions for CAC

- Have we covered all evaluation criteria in our analysis of construction alternatives and potential staging area locations?
- Are there any comments for or against the use of each of the potential staging areas? Have we missed any?
- Are there any issues or concerns regarding traffic routes or pedestrian access restrictions that we should know about? Are there restrictions on hours of operation or duration that we should be considering in our evaluation?

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – August 22, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II Project Update

David C. Noonan, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

III Presentation: Staging Areas; Pedestrian and Traffic Issues

David C. Noonan, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

James H. Winkler, P.E., Manager of Design
Camp Dresser & McKee Inc.

Joseph Wanat, P.E., Transportation Engineer
Vanasse Hangen Brustlin, Inc.

Q&A with CAC

IV Questions and Answers (General Public) Wrap Up

Summary

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian opened the meeting by introducing herself as the new CAC Facilitator and summarizing her understanding of her role and the role the CAC is playing on the project. Ms. Jeghelian emphasized that she will follow the same process and procedures that Fredie Kay developed with the group.

John Burckardt presented two project-related updates. Mr. Burckardt noted that a CAC member had raised the issue of the potential impact of the proposed new Red Sox ballpark on the Muddy River project. He explained that the project team has not studied the potential impact that construction of a new ballpark could have on construction of Muddy River improvements. Mr. Burckardt suggested that the CAC address this issue at a later point in the project.

Mr. Burckardt also summarized the Boston Water and Sewer Commission's project – cleaning of the Stony Brook Conduit. Mr. Burckardt referenced the Commission's project fact sheet that he distributed to the CAC at the meeting. He further explained that the Commission has a staging area at Charlesgate East to facilitate the cleaning of the conduit. If CAC members have questions or concerns about this project they should contact Janet Mainiero at the Commission at 443-9554.

II Project Update

Dave Noonan provided a brief project update summarizing the major activities the CDM team has been working on since the last CAC meeting on July 17, 2000. Specifically, Mr. Noonan updated progress on the following project tasks:

- Approximately 90 borings have been completed as part of the sediment-sampling program. Charlesgate and Back Bay Fens are done. The wet weather has slowed progress on the borings due to elevated water levels in the river. Remaining borings in Wards, Willow and Leverett Ponds and the Riverway will be completed within the next two weeks.
- The wetlands delineations are almost complete. There are some inconsistencies between the data and the mapping that are being corrected. Submittals to Boston and Brookline Conservation Commissions will be completed and submitted by September 6. Both conservation commissions will address the wetlands delineations at their September meetings.
- The DEP has provided the project team with their comments on the water quality sampling program. The project team has responded to the DEP's comments and is awaiting approval to commence sampling program.
- The culvert design alternatives are progressing smoothly. Several proposed configurations have been developed and analyzed. Proposed alternatives will be presented at the September 19 CAC meeting.

III CAC Discussion of Statement on Habitat & Historic Treatment

Ms. Jeghelian referenced the orange colored sheet in the CAC members' information package that contained the revised, proposed affirmative statement from the CAC to the project team regarding habitat and historic treatment.

John Burckardt explained that if the CAC approves of the statement, the CDM consultant team will be directed to follow the direction the CAC established for the habitat and historic treatment aspects of the project.

There was discussion among CAC members regarding the statement and consideration of broadening the statement to reflect other elements and aspects of the project.

Mr. Burckardt noted that the statement could be as narrow or broad as the CAC wishes it to be. Bruce Conklin of CDM reminded the CAC that the original intent of the statement was for the CAC to provide an affirmative direction to the CDM consultant team on how they should proceed with the project as it relates to wildlife habitat and historic landscape treatment planning. The statement was not intended to serve as a guiding principle for the consultant team to follow for the entire project. It was noted that other project elements might very well warrant similar directives from the CAC as the one proposed herein.

Based on CAC member comments and Mr. Burckardt's response, the CAC agreed to the final proposed wording as provided on the orange sheet with one grammatical change. The final statement approved by the CAC follows:

The CAC agrees that the wildlife habitat and historic landscape treatment planning for the EIR should be guided by the 1990 Master Plan augmented as follows:

- ***Include new information obtained by the consultant team, CAC and others;***
- ***Incorporate subsequent wetland and historic resource regulations;***
- ***Include removal of invasive species; and***
- ***Include other necessary actions to enhance the compatibility of biodiversity, historic preservation and sustainability.***

The CAC concluded this discussion with recommendation that it adopt similar statements to provide direction to the consultant team as it proceeds with other elements of the project.

IV. Presentation: Staging Areas; Pedestrian and Traffic Issues

Mr. Noonan prefaced the presentation by explaining the purpose of the presentation and discussed why staging areas are being reviewed simultaneously with the pedestrian and traffic issues.

Mr. Noonan summarized the need for staging areas. He explained that at this point in the project, the project team has begun an evaluation of alternative construction methodologies. Mr. Noonan added that each of the alternative construction methodologies have different staging area requirements. Some construction methodologies may require more staging areas than others. Some construction methodologies also may require larger staging areas, and for a longer duration than other construction alternatives.

Mr. Noonan emphasized that the staging area requirements are one of many factors that are analyzed for each construction alternative. Therefore, it is important to review potential staging areas with the CAC and get their input and feedback on the proposed sites. The CAC's input and direction on the staging areas will be factored into the analysis of each construction alternative.

Pedestrian and traffic impacts exist for each staging area. Review of these impacts is particularly important because of all the impacts that a staging area can present, these are the ones that will most directly affect users of the Muddy River parkland areas and other areas adjacent to proposed staging locations.

Mr. Noonan then introduced Jim Winkler from CDM and Joe Wanat from VHB to make the presentation on the staging areas, pedestrian and vehicular traffic issues. A copy of the CDM consultant team presentation is enclosed as Attachment 2.

Q&A with CAC

A CAC member commented that the consultant team has made a compelling argument for the use of hydraulic dredging rather than mechanical dredging. What is the downside of hydraulic dredging?

Jim Winkler responded that in this application on the Muddy River, hydraulic dredging is the optimal dredging method. The overall impacts and cost will be less than mechanical dredging. In addition, the construction duration can be considerably less if hydraulic dredging is used rather than mechanical dredging.

As part of Mr. Winkler's response, he again summarized the two dredging techniques and their potential impacts to the bank and parkland areas.

If hydraulic dredging is used, please clarify what staging areas would be needed at a minimum to facilitate dredging from Wards Pond downstream to the Back Bay Fens?

Mr. Winkler responded that for the ponds and the upper Riverway, either Daisy Field or the former MDC Kelly Rink site would be needed. For other parts of the Riverway and upper Back Bay Fens either Netherlands Road or the former Sears Parking lot site. For the Back Bay Fens, the options include the former Sears parking lot, the open area near Avenue Louis Pasteur, Clemente field, the lagoon area, or Agassiz Road.

A CAC member asked if the project team has considered the land areas along the Riverway for use as staging areas.

Mr. Winkler responded that the upland areas along the Riverway segment of the river are too steep to locate a staging area and there would be too much land disturbance and other related impacts to justify a staging area along at these locations.

What would be the land impacts of a staging area?

Mr. Winkler responded that the land impacts of a staging area would be significant, but temporary. At each staging area, the contractor will likely lay gravel material down to better support the truck traffic exiting and entering the site. Mr. Winkler emphasized that all staging areas would be fully restored according to the landscape treatment plans that will be developed by Pressley & Associates, the landscape architects for the project.

What are the land impacts from both hydraulic and mechanical dredging?

Mr. Winkler responded that the land impacts associated with hydraulic dredging are considerably less than the land impacts associated with mechanical dredging. In both operations, the dredge barge would be placed into the river by a crane.

With hydraulic dredging, what is the diameter of the pipe used to pump dredged material from the river to the staging area?

Mr. Winkler said the pipe diameter in a hydraulic dredge operation will be either 8-inch or 10-inch.

How will the Phragmites *be removed from the River?*

Mr. Winkler briefly explained the likely method in which the *Phragmites* will be removed from the River. He emphasized that *Phragmites* removal will likely take place from the middle of the River and the consultant team does not anticipate significant impacts to the banks during removal of the *Phragmites* and their root mass. The consultant team will attempt to minimize disturbance to the riverbanks during *Phragmites* removal.

A CAC member commented that in order to properly evaluate each proposed staging area location, the CAC needs to better understand the other associated impacts such as noise, traffic, etc.

Mr. Winkler said that a detailed evaluation of each proposed staging area location and the associated impacts will be clearly presented in the Draft Environmental Impact Report.

A CAC member commented that the previous dredging project in the Back Bay Fens was done with very little impact to the land.

Can the Agassiz Road staging area be configured so that pedestrian access is not obstructed? As the proposed site is presently configured, the pedestrian dirt path would be blocked off?

Mr. Winkler responded that if Agassiz Road were used for a staging area, the existing dirt path would have to be temporarily closed. However, Mr. Winkler added that a temporary path could be installed that would enable pedestrians access from the walking paths along The Fenway to Agassiz Road beyond the proposed staging area to Park Drive.

There are a number of trees within and surrounding many of the proposed staging areas. What would happen with these trees?

Mr. Winkler responded that trees adjacent to staging areas would be protected. Trees within a staging area would be protected if possible but would likely require removal. Mr. Winkler added that any tree that would be a candidate for removal would be evaluated and that heritage or original Olmsted era trees, for example, would not be removed.

Has the project team considered the use of the basketball courts adjacent to Clemente Field for use as a staging area rather than the Lagoon/Jersey Street Staging Area?

Mr. Winkler responded that he believes the basketball courts do not meet the size requirements for the construction alternatives but the consultant team will revisit and assess the potential use of the courts as a potential staging area. Mr. Winkler added that it is CDM's understanding that the basketball courts are heavily used and mitigating the loss of the courts may be difficult to achieve.

What are the noise impacts associated with hydraulic dredging?

Mr. Winkler said the noise impacts are minimal and limited to a diesel or gasoline powered generator. Mr. Conklin added that the project team will look into requiring the contractor to use a temporary electric service for the equipment. He said that the use of a temporary electric service would be dependent upon the utility (electric) service available at the location of the staging area. Mr. Winkler also added that the hydraulic dredging process itself does not generate any noise.

If mechanical dredging was used, can the dredged material be run through the belt filter press similar to the hydraulic dredge alternative?

Mr. Winkler responded that the dredged material from a mechanical dredge process contains too little water to be dewatered through a belt filter press. Water would need to be added before processing. The more critical issue is when using the mechanical dredging process; the material removed could not be pumped from the removal location to the belt filter press.

The project team needs to make sure that the contractor, upon completion of the project, will be required to remove all piping used to transport dredged material from the river to the staging area. The CAC member added that some of the piping from the last dredging project could still be seen in the Back Bay Fens.

A CAC member commented on the importance of the bank edge. The project team needs to clearly define the original bank edge. This will be critically important during the Phragmites *removal process.*

The project team should consider the use of Evans Way Park as a staging area. Use of Evans Way Park could obviate the need for using Agassiz Road. Agassiz Road is an important connector between Park Drive and The Fenway and is an important connection between the east and west Fenway areas. Loss of Agassiz Road would be a significant impact to people who live in the Fenway.

Mr. Winkler responded by saying that the project team will evaluate the use of Evans Way Park as a staging area for the Back Bay Fens segment of the River. CDM will report the results of this evaluation in the draft environmental impact report.

From this presentation, there is nothing compelling to suggest why mechanical dredging should be further considered, therefore why is the project team evaluating mechanical dredging?

Jason Cortell from Jason M. Cortell and Associates responded that the Secretary of Environmental Affairs, in the MEPA Certificate on the Environmental Notification Form (ENF) for this project, required the project proponent to consider and evaluate alternative dredging methods including mechanical dredging.

A CAC member requested that the project team provide more information with the noise associated with each of the proposed staging areas and how the noise impacts compares with the ambient or background noise for the areas in which they are situated.

Mr. Winkler responded that this information will be provided in the draft environmental impact report. Mr. Winkler added that he believes the noise impacts present at the staging areas will be no greater than the current ambient noise levels in the area. For example, the most significant noise generator at a staging area will be a portable diesel generator, which will be no louder than a diesel pick-up truck. Alternatively, the project team will consider the use of a temporary electric service, provided there is sufficient electrical service accessible in the area to power the equipment in the staging area..

The project team needs to make sure that the contractor, upon completion of the project, will be required to remove all piping used to transport dredged material from the river to the staging area. .The CAC member added that some of the piping from the last dredging project could still be seen in the Back Bay Fens.

A CAC member commented on the importance of the bank edge. The project team needs to clearly define the original bank edge. This will be critically important during the Phragmites *removal process.*

The project team stated that the construction duration would be approximately 32 months. If hydraulic dredging is the utilized construction method, by how many months can the construction schedule be reduced?

Mr. Winkler stated that the construction schedule could be considerably shortened. He emphasized that the project team has not analyzed construction duration sufficiently to make a determination on how much the construction schedule can be reduced.

A CAC member suggested that the CAC consider writing a letter to MEPA recommending that mechanical dredging be no longer considered a construction alternative for the proposed Muddy River improvements.

Proposed CAC Statement on Staging Areas

Ms. Jeghelian asked CAC members to focus on the criteria that the project team is using to assess and evaluate the impacts of the different construction alternatives. Ms. Jeghelian asked if there are other criteria that the project team should utilize in its analysis.

There was some discussion among CAC members regarding the criteria. The CAC agreed to the following additional criteria that the project team should utilize:

- Ecological impacts of construction alternatives
- Ecological impacts of staging areas
- Historic Resource and Habitat impacts

The CAC further requested that, in the EIR document, the CDM team develop a matrix, or a series of matrices, with each of the staging and construction alternatives, the evaluation criteria, impacts to each of the criteria and other critical issues associated with each alternative.

The CAC also asked that the project team develop, for the CAC's consideration, an affirmative statement on the staging areas, pedestrian and traffic issues that reflects the sentiments of the CAC members. The project team agreed and committed to developing a statement for the CAC which will be mailed to them in advance of the September 19 CAC meeting. *Note: these draft statements are included on a separate sheet included in the mailing dated September 11, 2000.*

Several CAC members requested a site visit to the Hardy Pond dredging project in Waltham. Bruce Conklin responded for the project team and stated that a video clip of the operation at Hardy Pond will be shown to the CAC at the September 19 meeting.

V Questions and Answers (General Public) Wrap Up

A person asked that the project team provide more detailed analysis of impacts at each of the proposed staging areas, particularly the Agassiz Road site.

A person asked what is the noise level from a diesel generator running all day long.

The design team agreed to look into these questions, and present actual noise level data.

A person noted that the City of Boston has a noise ordinance. Also, the City does not allow buses to idle for more than 5 minutes. The design team should consider these requirements.

The design team will consider these requirements.

A person asked if the Phragmites *beds could be used for a staging area.*

Mr. Winkler stated that the *Phragmites* beds could not support the load of the equipment that will be used to remove *Phragmites* therefore they could not be used as a staging area.

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for Tuesday, September 19, 2000. The meeting will be held in Northeastern University's Dodge Hall in Room 450. Dodge Hall is on Huntington Avenue next to the YMCA.

The meeting will be the first of two meetings on the subjects of culverts, open channels (daylighting), dredging and disposal. The meeting on September 19th will focus on the basis for establishing the flood control objective of the project, the culvert alternatives being considered for the project, the daylighting alternatives at the former Sears lot and near Avenue Louis Pasteur, and the channel dredging required for flood control.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – CDM Consultant Team Presentation

Emerald Necklace Citizens Advisory Committee

Meeting

August 22, 2000

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	[illegible] Callanan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	Christine Cooper
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios, inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

Sign-In She

August 22, 2000

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	Arleyn Levee
John A.	Martin	Emerald Necklace Conservancy	
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	
Mary Crain	Penniman	Charles River Watershed Association	Mary Crain Pennim
Jane	Pfister	Brookline Resident	Jane Walker Pfist
George	Proakis	Boston Resident	George J Proakis
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

Emerald Necklace Citizens Advisory Committee

Meeting

August 22, 2000

Sign-In Sheet

\\parksmail\bosparks\Muddy\CAC Meetings\CAC-8 Aug 22, 2000\CAC-8 Sign-In 8-22-00.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Edward Burke	ROW	536-1839	edburke2@
Susan M Mackey	Wheelock College 200 The Riverway	879-2312	smackey@wheelock.edu
Bob McDonnell	N.U.	373-5330	
David A. Mendelsohn	EOEA/DEM	(617) 973-8772	david.mendelsohn@state.ma.us
Maria Clune	ROW	277-5427	
Erin Chute	Brookline Conservation	730-2088	
Frances Shedd-Fisher	Brookline Olmsted Committee	566-1237	
Melvin E. Clouse			
Simone Auster	Emerald Necklace Conservancy	722-9823	
Jan Henderson	MASCO, 375 Longwood, Boston	632-2762	
Samantha Overton Russell	MDC	727-3227 x503	samantha.overton@state.ma.us
Mark P. Simon	EOEA	617 626-1050	
Betsy Shure Gross	EOEA	626-1117	
Carole Kaslick	CDM	452-6323	kaslickcz@cdm.com
Jay Cortell	Cortell	781-8903737 x111	cortell@cortell.com
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Carlton L Noyes	Cortell Assoc	781 890 3737 x128	Cortell@Cortell.com

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

August 22, 2000

\\parksmail\bospark\Muddy\CAC Meetings\CAC-8 Aug 22, 2000\[CAC-8 Sign-in 8-22-00.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Manion Pressley	Pressley Assoc.	617-491-5300	
Chris Conklin	VHB	617-924-1770	cconklin@vhb.c
Joe Wanat	VHB	"	jwanat@vhb.c
Fran Beatty	Bos. Parks		
John Burckardt	PB / Boston Parks	635-4505	jburckardt@ci.boston
Dave Noonan	CDM	617-452-6275	NOONANDC@ CDM.
Jim Winkler	CDM	617-452-6000	

MEMORANDUM

DATE: September 11, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**; Other Information

NOTE: 2 MEETINGS IN SEPTEMBER

PLEASE ALSO NOTE THE MEETING LOCATIONS!

Tuesday, September 19, 2000

Northeastern University

Dodge Hall

Room 450
Huntington Avenue (next to YMCA)

Agenda Topics: Culvert/Open Channel
Includes video of hydraulic dredging at Hardy Pond, Waltham.

Thursday, September 28, 2000

Northeastern University

Egan Engineering /Science Research Center

Raytheon Amphitheater — Room 240
Forsyth Street (next to Ruggles Station)

Agenda Topics: Dredge/Disposal (Haul Routes)

5:45 p.m.	**Refreshments**
6:00 p.m.	**Presentation & Discussion**
8:30 p.m.	**Adjourn**

~ ~ ~ ~ ~ ~ See Map on Back! ~ ~ ~ ~ ~ ~

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Other Attachments:

1. Draft of Statements from last CAC Meeting. (Yellow Sheet)
2. Meeting Summary, CAC Meeting of August 22, 2000.
   Please review. Submit written comments within 7 calendar days John Burckardt by fax (617-635-3256) or e-mail (jburckardt@ci.boston.ma.us) The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.

BOSTON
Thomas M. Menino, Mayor

EMERALD NECKLACE
ENVIRONMENTAL IMPROVEMENTS MASTER PLAN
AND
PHASE I MUDDY RIVER FLOOD CONTROL,
WATER QUALITY AND HABITAT ENHANCEMENT

MEMORANDUM

DATE: September 8, 2000

TO: Emerald Necklace Citizens Advisory Committee (CAC)

FROM: John Burckardt

RE: **4 Draft CAC Statement on Staging Areas and Dredging Issues**

As a follow-up to the August 22, 2000 CAC meeting on Staging Areas, Pedestrian and Traffic issues, t following four (4) draft statements are presented at the CAC's request for review and consideration.

Draft Statement on Evaluation Criteria for Staging Area Selection:

The CAC supports use of the following evaluation criteria that are used in the project design consultan analysis of construction alternatives and potential staging area locations (presented in alphabetical order):

- *Bank disturbance*
- *Bridge and other height constraints*
- *Construction-related truck traffic*
- *Ecological impacts of construction alternatives*
- *Ecological impacts of staging areas*
- *Historic resource and habitat impacts*
- *Neighborhood traffic impacts*
- *Odors and noise impacts*
- *Park use impacts*
- *Pedestrian circulation*

H:\Muddy\CAC Meetings\CAC-6 Aug 22, 2000\Draft CAC Statement on Staging Areas.do

Draft Statement on Dredging Method Selection:

The CAC recommends that hydraulic dredging is the preferred alternative with the exception of Phragmites *removal.*

Draft Statement on Staging Area Use:

The CAC recognizes that staging areas are needed to enable and support construction of Muddy River improvements. The CAC understands the number of staging areas needed depends on the improvements to be constructed and the construction alternative utilized. The CAC also requests that the fewest possible staging areas be used for the shortest time duration feasible. To this end, the CAC also supports the use of hydraulic dredging where dredging is necessary to minimize impacts on banks, shorten staging area use, and to control exposure to sediments.

Draft Statement on Selection and Evaluation of Staging Areas:

The CAC supports the evaluation and analysis of the following locations, one or more of which could potentially be used as a staging area during construction of Muddy River improvements.

1. *Charlesgate*
2. *Agassiz Road*
3. *Duck House*
4. *Lagoon (Jersey Street)*
5. *Clemente Field*
6. *Evans Way Park*
7. *Fens at Louis Pasteur*
8. *Former Sears Parking Lot*
9. *Netherlands Road*
10. *Daisy Field*
11. *Former MDC Kelly Rink*

The CAC, at this time, does not specifically endorse the use of any of the above referenced locations for use as a staging area until it reviews the complete impact evaluation on each site that will be presented in the Draft Environmental Impact Report.

~ ~

The CAC is asked to review the above statements. There will be 15 minutes at the start of the next CAC meeting (September 19th) for a discussion of these statements. This discussion can be continued at the September 28th meeting, if requested. In addition, the CAC may provide comments prior to the September 19th meeting to:

John Burckardt,
Project Manager, Muddy River Restoration
Boston Parks & Recreation Department
1010 Massachusetts Avenue, 3rd Floor
Boston, MA 02118

Phone: (617) 635-4505 x6517
Fax (617) 635-3256
E-Mail: jburckardt@ci.boston.ma.us

Emerald Necklace Citizen's Advisory Committee
Dodge Hall, Northeastern University
Room 450

Tuesday, September 19, 2000
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:10

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*
***John Burckardt**, Project Manager*

II. Project Update 6:10 – 6:20

***Bruce R. Conklin, P. E.**, Vice President*
Camp Dresser & McKee Inc.

III. CAC Discussion of Statement on Staging Areas 6:20 – 6:35

***Susan Jeghelian**, MA Office of Dispute Resolution, Facilitator*

Discussion of the statements may be continued to the second part of this meeting on September 28th.

IV. Video: Hydraulic Dredging at Hardy Pond, Waltham 6:35 – 6:45

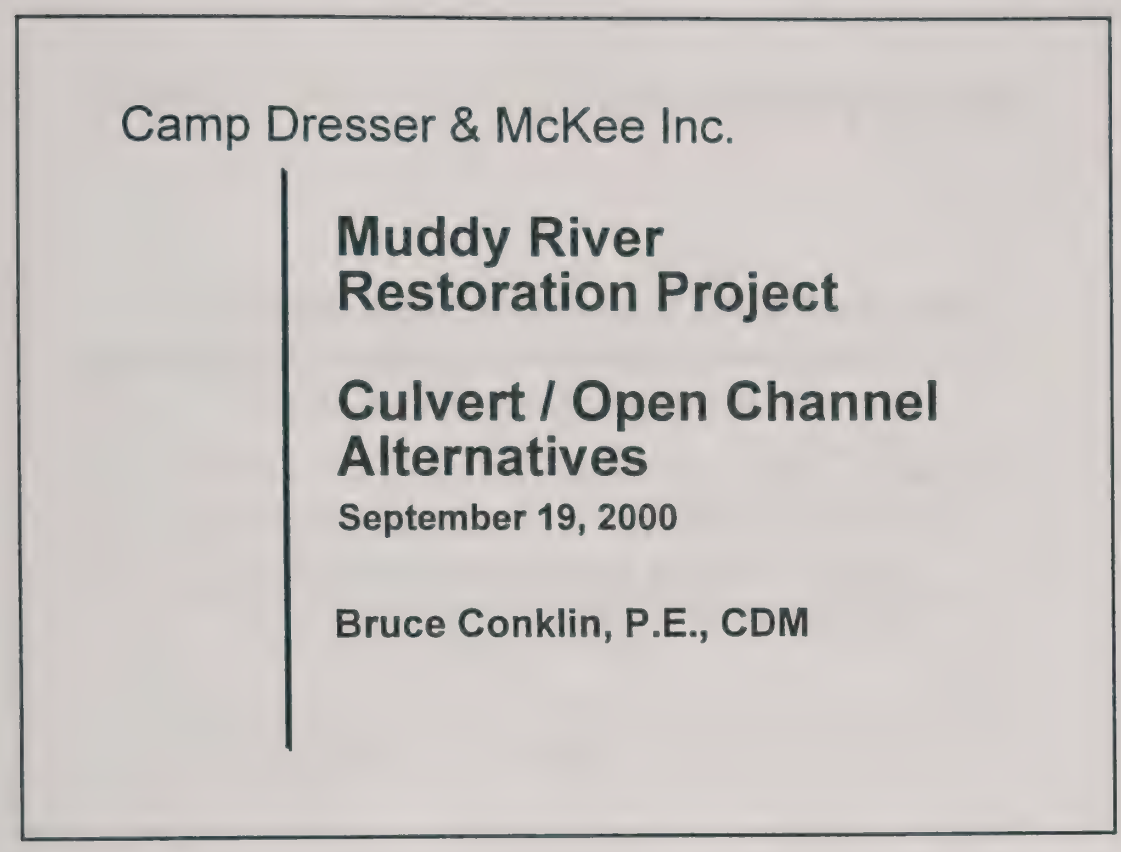
V. Presentation: Culvert/Open Channel/Dredge/Disposal 6:45 – 7:45

***Bruce R. Conklin, P. E.**, Vice President*
Camp Dresser & McKee Inc.

Q&A/Discussion with CAC 7:45 – 8:20

Discussion may be continued to the second part of this meeting on September 28th.

VI. Questions and Answers (General Public) Wrap Up 8:20 – 8:30



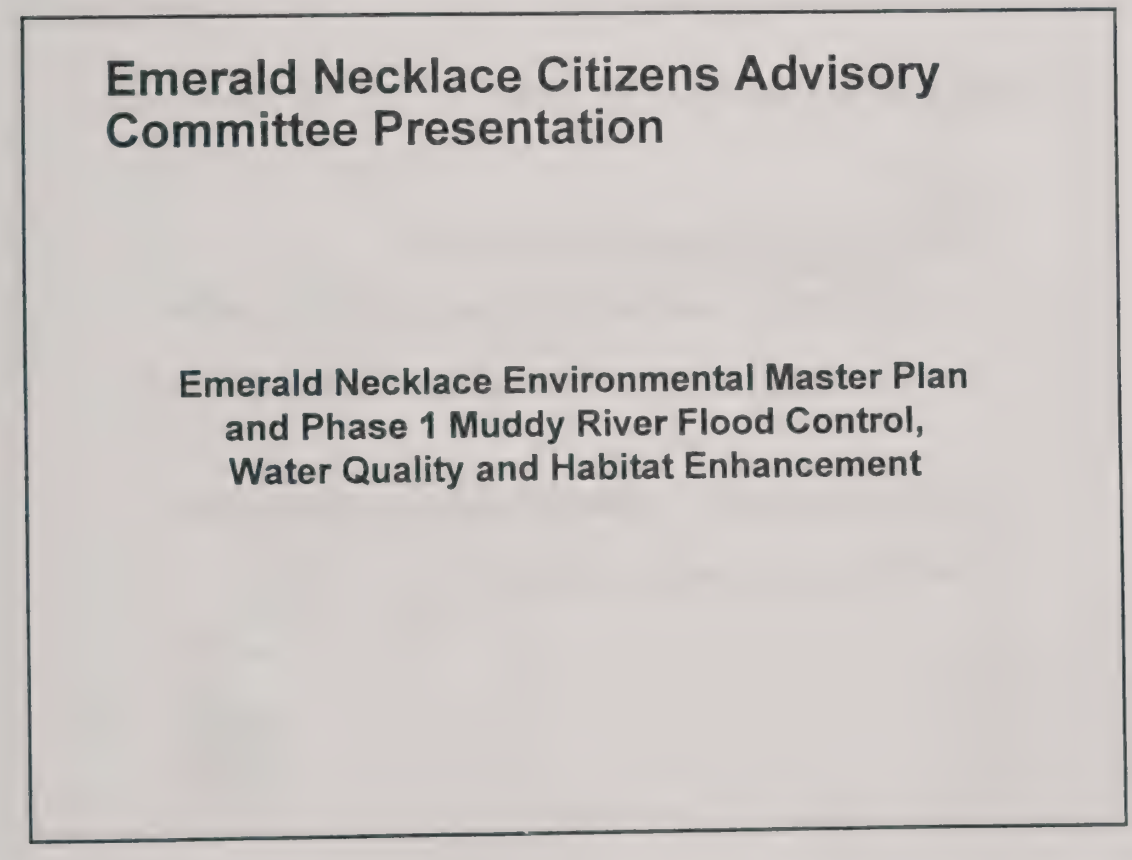
Camp Dresser & McKee Inc.

Muddy River Restoration Project

Culvert / Open Channel Alternatives

September 19, 2000

Bruce Conklin, P.E., CDM



Emerald Necklace Citizens Advisory Committee Presentation

Emerald Necklace Environmental Master Plan and Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement

Meeting Objective

- Obtain CAC views on whether additional alternatives should be considered for drainage improvements (culverts and daylighted channels)
- Identify preferred alternative for drainage improvements to carry forward in Draft Environmental Impact Report

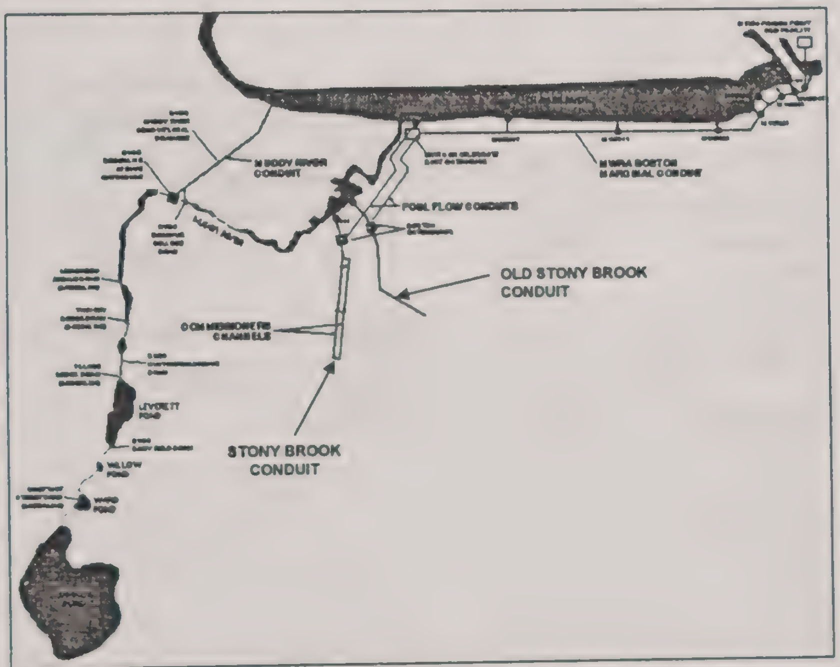
Presentation Outline

- Hydraulic basis of drainage improvements
- Drainage improvements alternatives by river segment
- Advantages / disadvantages of alternatives
- Dredging cross sections

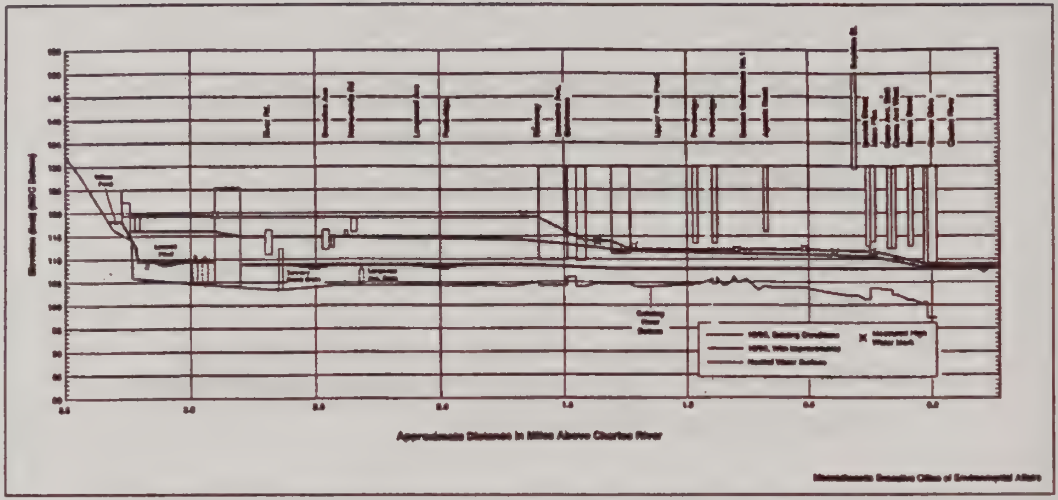
Basis for Hydraulic Evaluation

- Planning level hydraulic study of Muddy River for Executive Office of Environmental Affairs (EOEA), October, 1998
- Uses storm of October 20-21, 1996 as design storm
- Recommends improvements to lower flood levels from design storm
- Used as basis for Environmental Notification Form (ENF) for BPRD

Schematic of the Muddy River



Hydraulic Profile of Muddy River

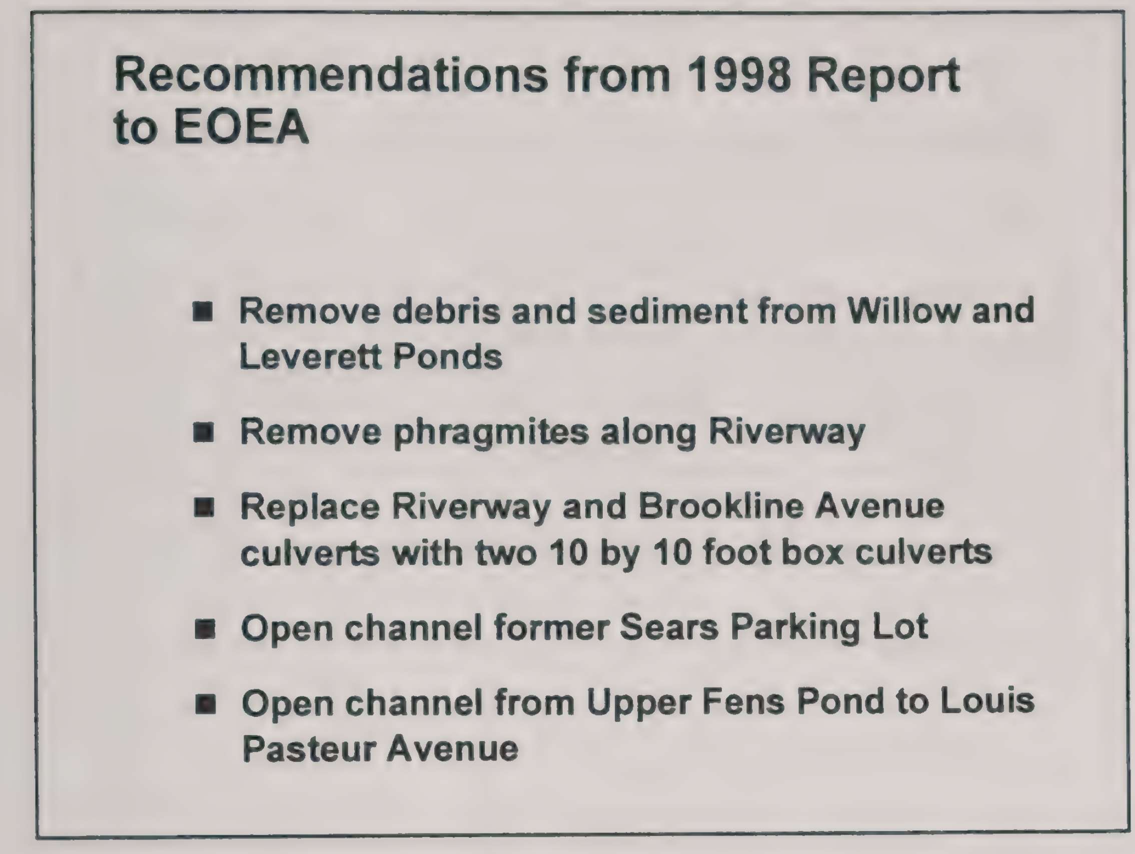


Massachusetts Executive Office of Environmental Affairs

Selected Water Elevations*

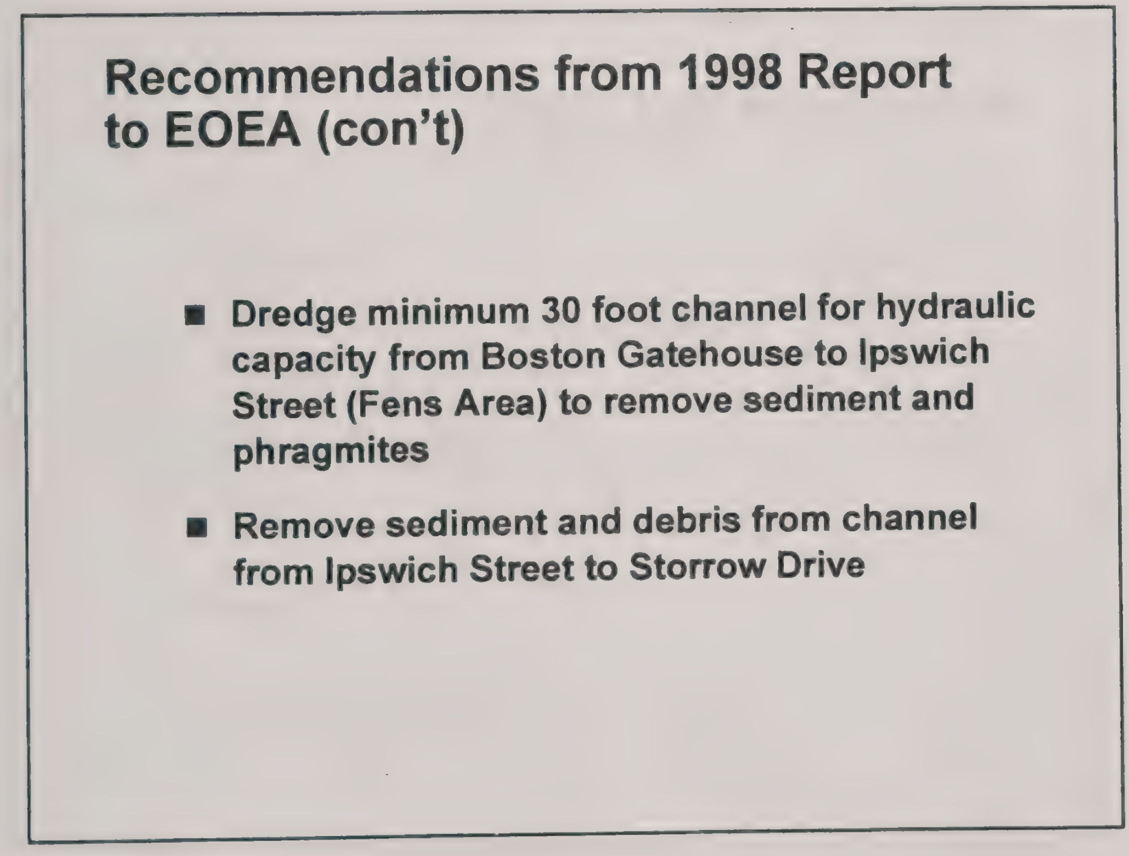
	Normal Water Surface	Water Surface during Oct. 1996 Storm	Water Surface w/ Improvements during Oct. 1996 Storm
Agassiz Road	108.5	111.9	111.9
Riverway Culvert	108.5	118.8	113.4
Leverett Pond	108.5	119.4	116.1

*MDC datum



Recommendations from 1998 Report to EOEA

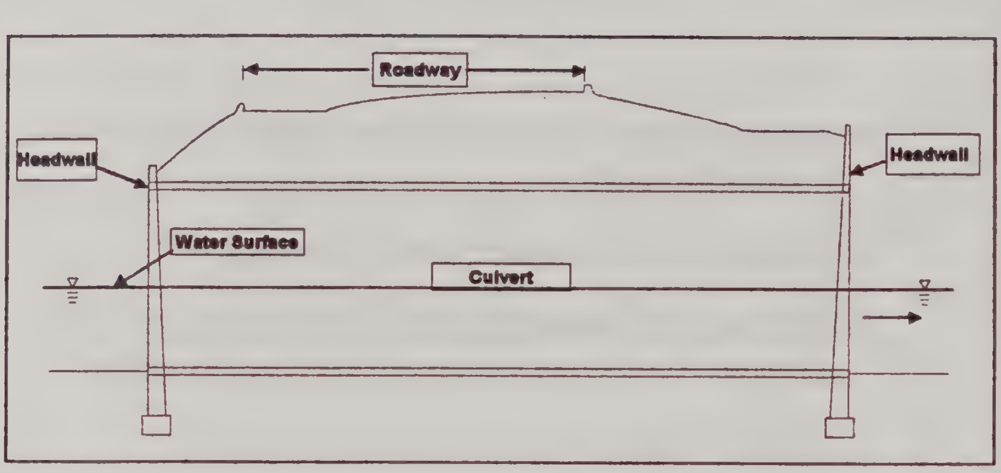
- Remove debris and sediment from Willow and Leverett Ponds
- Remove phragmites along Riverway
- Replace Riverway and Brookline Avenue culverts with two 10 by 10 foot box culverts
- Open channel former Sears Parking Lot
- Open channel from Upper Fens Pond to Louis Pasteur Avenue



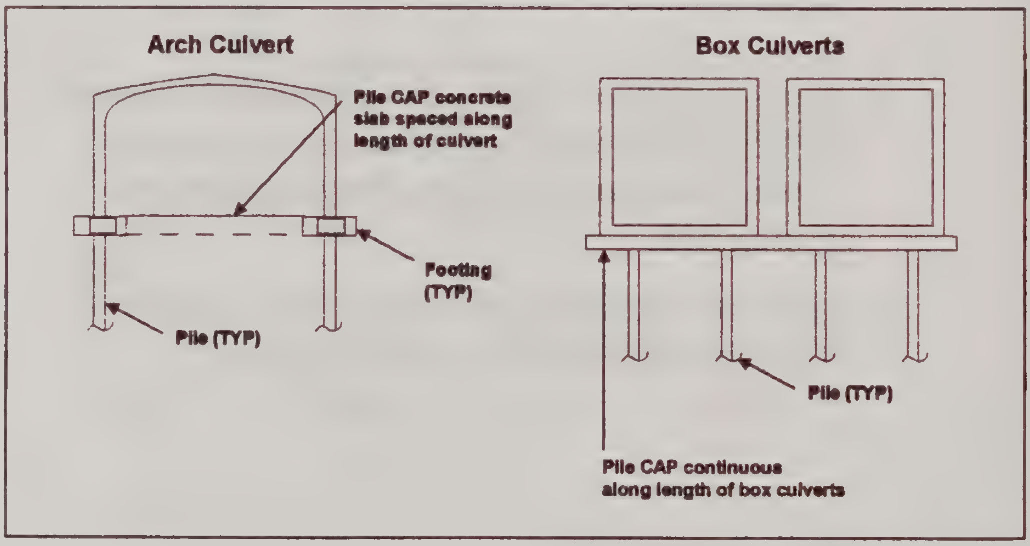
Recommendations from 1998 Report to EOEA (con't)

- Dredge minimum 30 foot channel for hydraulic capacity from Boston Gatehouse to Ipswich Street (Fens Area) to remove sediment and phragmites
- Remove sediment and debris from channel from Ipswich Street to Storrow Drive

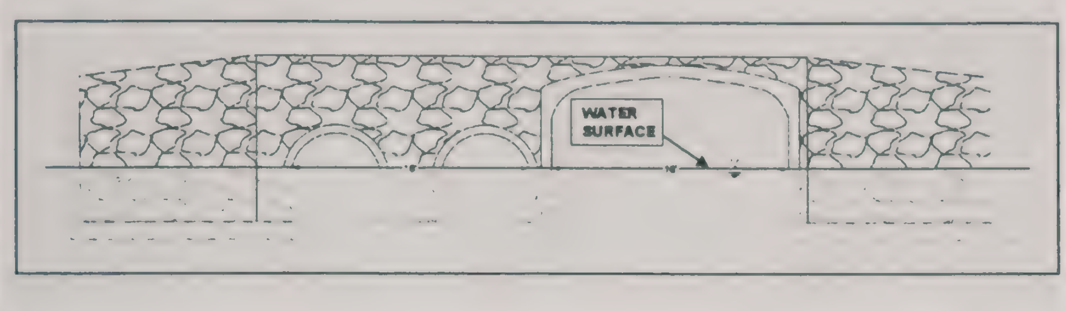
Culvert 101



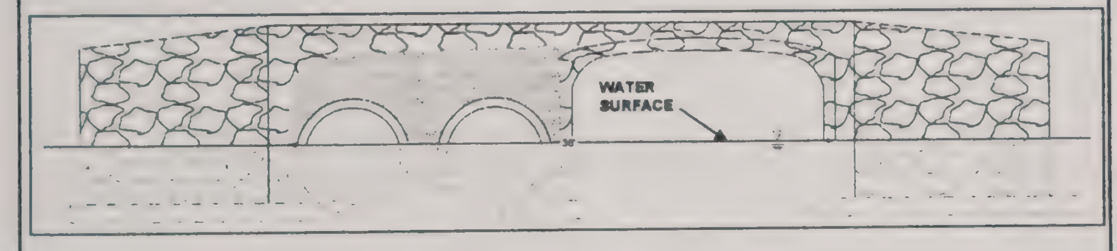
Arch Versus Box Culvert


Arch Culvert
Pile CAP concrete slab spaced along length of culvert
Footing (TYP)
Pile (TYP)
Box Culverts
Pile (TYP)
Pile CAP continuous along length of box culverts

Headwall - Multiple Openings



Headwall - Single Opening



Summary of Culvert/Open Channel Improvements

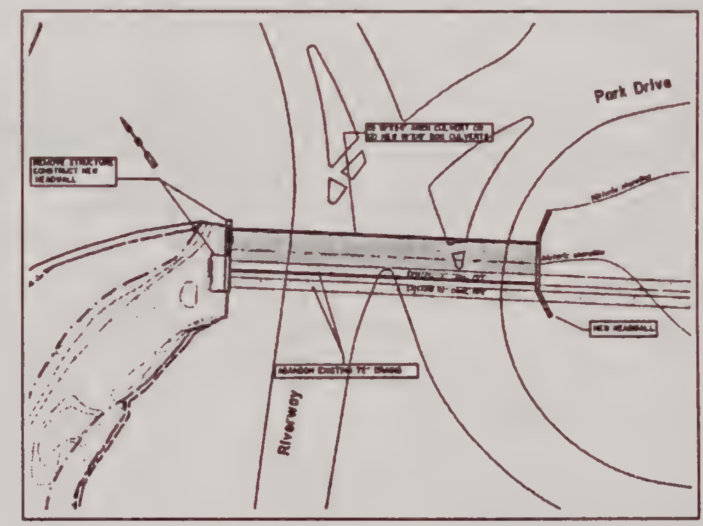
	Site 1	Site 2	Site 3	Site 4	Site 5
Options	Riverway Culvert	Former Sears Lot	Brookline Ave	Upstream of Fens Bridge	Fens Bridge
1	Single 10'x24' arch* culvert east of current alignment	Straight Channel	Single 10'x24' arch* culvert - abandon existing drains, option to retain Gatehouse	Straight Channel	▨ Re-use existing culvert - rebuild upstream headwall
2	Single 10'x24' arch* culvert west of current alignment	Channel similar to historic layout	Single 10'x24' arch* culvert - maintain existing drains	▨ Historic layout of channel	Add 4'x12' arch* culvert east of existing culvert
3	▨ Single 10'x16' arch* culvert west of current alignment - retain current culverts	▨ Channel modified from historic layout	▨ Single 10'x24' arch* culvert - plug upstream side of Gatehouse		Replace existing culvert with a single 10'x24' arch* culvert
4	Single 10'x15' arch* culvert east of current alignment - retain current culverts		Single 10' x 24' arch* culvert across Site 1, 2 and 3, abandon existing drains		

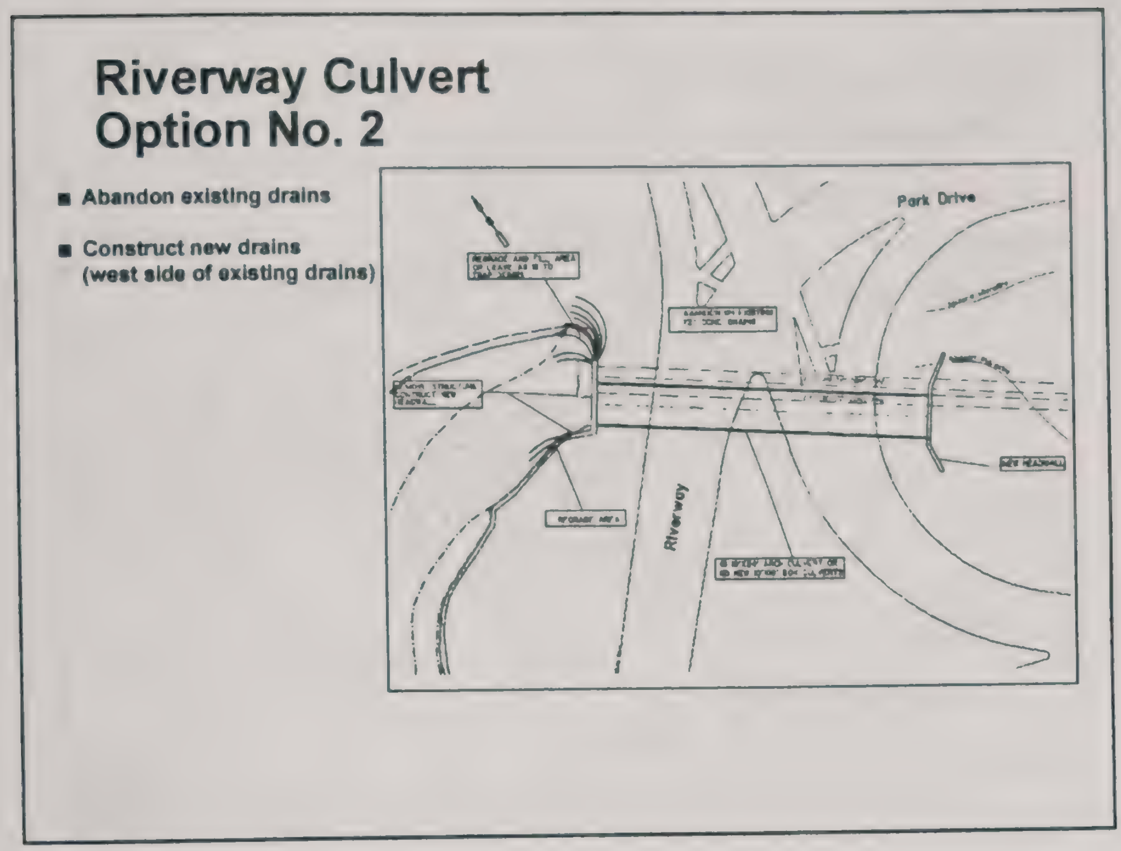
* or twin box culverts

▨ Consultants recommended options

Riverway Culvert Option No. 1

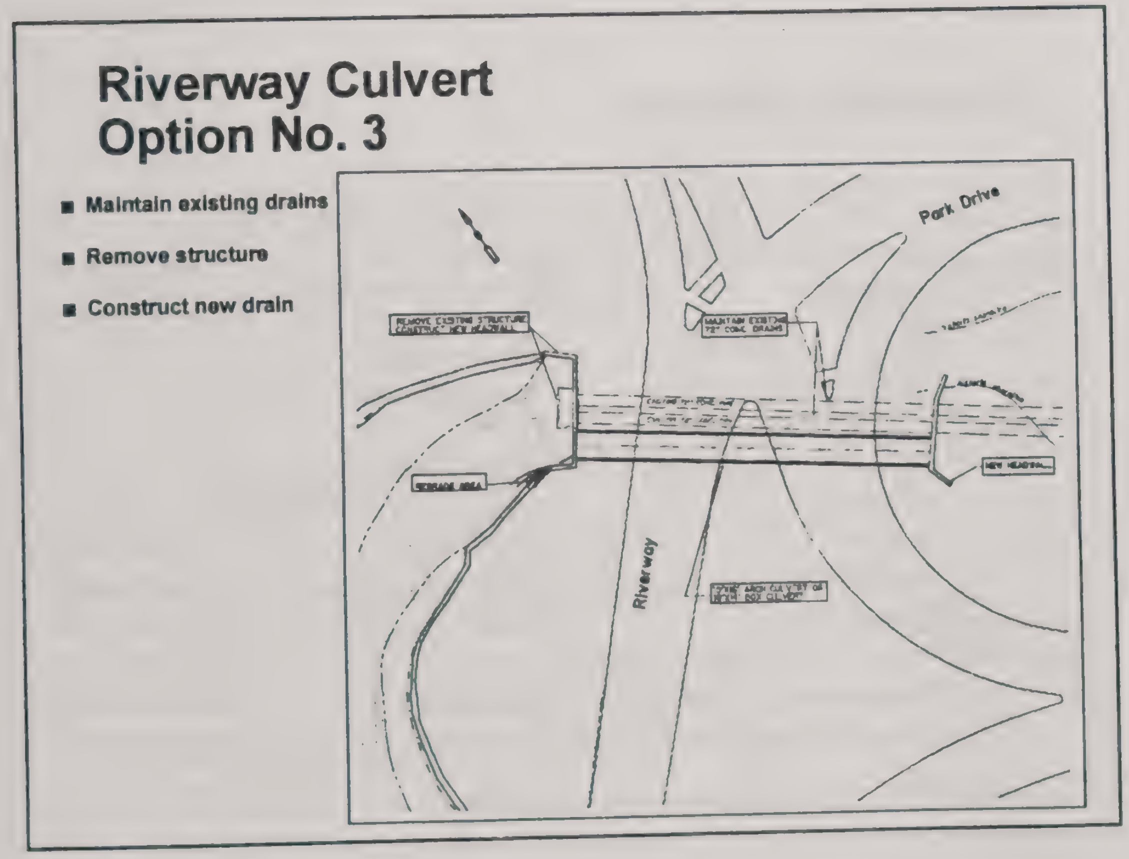
- Abandon existing drains
- Construct new drains (east side of existing drains)


REMOVE STRUCTURE CONSTRUCT NEW HEADWALL
Park Drive
Historic shoreline
NEW HEADWALL
ABANDON EXISTING 72" DRAINS
Riverway



Riverway Culvert Option No. 2

- Abandon existing drains
- Construct new drains (west side of existing drains)



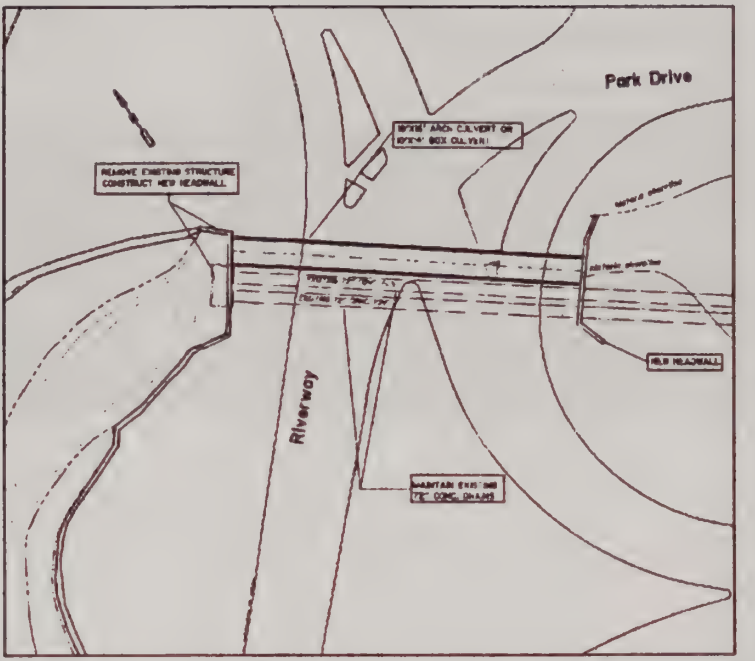
Riverway Culvert Option No. 3

- Maintain existing drains
- Remove structure
- Construct new drain

Park Drive
REMOVE EXISTING STRUCTURE CONSTRUCT NEW HEADWALL
MAINTAIN EXISTING 72" CONC. DRAINS
Riverway
NEW HEADWALL

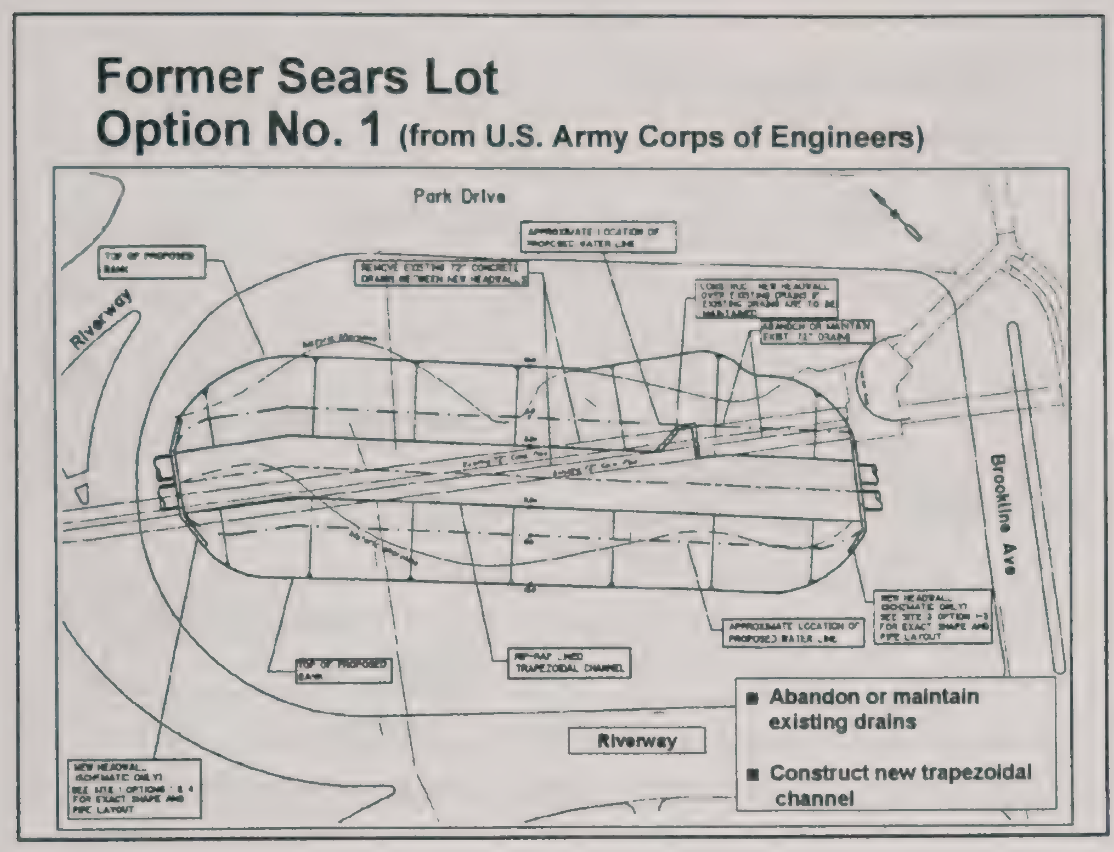
Riverway Culvert
Option No. 4

- Maintain existing drains
- Remove structure
- Construct new drain



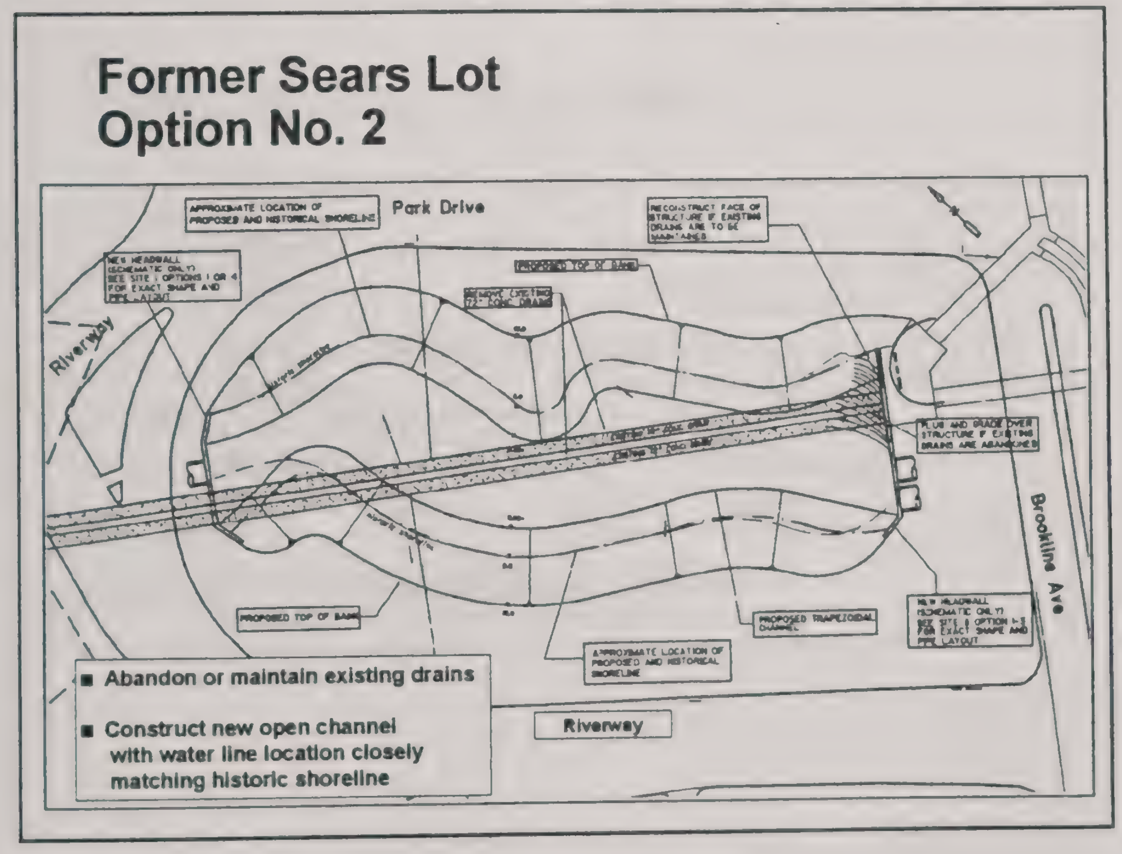
Riverway Culvert

Options	Historic Landscape Resources	Operations & Maintenance Issues	Differential Cost
1	Closely aligns with historic shoreline	Equivalent to other options	
2	Partially follows historic shoreline	Trash Collection Area	
3	Partially follows historic shoreline	Trash Collection Area	Less Costly by $150,000
4	Closely aligns with historic shoreline	Equivalent to other options	Less Costly by $150,000


Park Drive
Riverway
Brookline Ave
Riverway
TOP OF PROPOSED BANK
REMOVE EXISTING 72" CONCRETE DRAINS BETWEEN NEW HEADWALLS
APPROXIMATE LOCATION OF PROPOSED WATER LINE
LONG HUC. NEW HEADWALL OVER EXISTING DRAINS IF EXISTING DRAINS ARE TO BE MAINTAINED
ABANDON OR MAINTAIN EXIST. 72" DRAINS
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 3 OPTION 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
APPROXIMATE LOCATION OF PROPOSED WATER LINE
RIP-RAP LINED TRAPEZOIDAL CHANNEL
TOP OF PROPOSED BANK
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 1 OPTIONS 1 & 4 FOR EXACT SHAPE AND PIPE LAYOUT

Former Sears Lot
Option No. 1 (from U.S. Army Corps of Engineers)

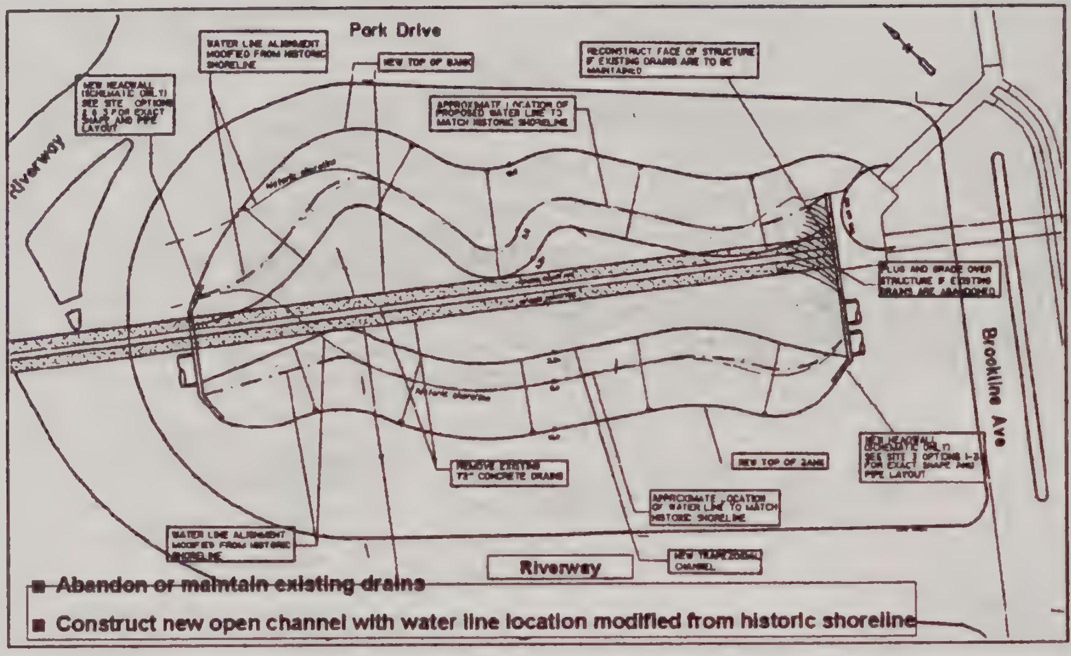
- Abandon or maintain existing drains
- Construct new trapezoidal channel


Park Drive
Riverway
Brookline Ave
Riverway
APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 1 OPTIONS 1 OR 4 FOR EXACT SHAPE AND PIPE LAYOUT
PROPOSED TOP OF BANK
REMOVE EXISTING 72" CONC DRAINS
RECONSTRUCT FACE OF STRUCTURE IF EXISTING DRAINS ARE TO BE MAINTAINED
PLUG AND GRADE OVER STRUCTURE IF EXISTING DRAINS ARE ABANDONED
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 3 OPTION 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
PROPOSED TRAPEZOIDAL CHANNEL
APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
PROPOSED TOP OF BANK

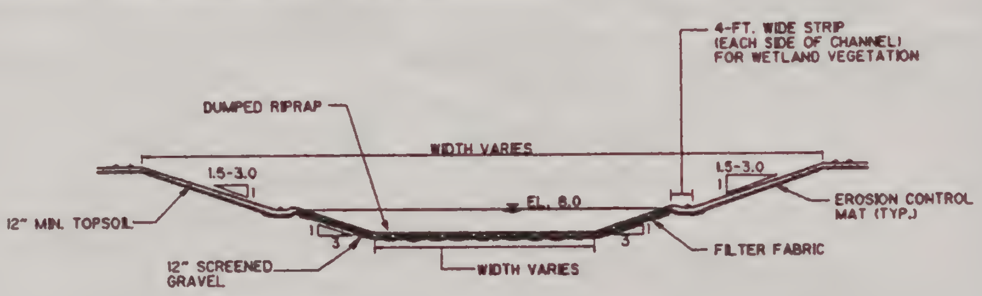
Former Sears Lot
Option No. 2

- Abandon or maintain existing drains
- Construct new open channel with water line location closely matching historic shoreline

Former Sears Lot
Option No. 3


Park Drive
Riverway
WATER LINE ALIGNMENT MODIFIED FROM HISTORIC SHORELINE
NEW TOP OF BANK
RECONSTRUCT FACE OF STRUCTURE IF EXISTING DRAINS ARE TO BE MAINTAINED
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE OPTIONS 2 & 3 FOR EXACT SHAPE AND PIPE LAYOUT
APPROXIMATE LOCATION OF PROPOSED WATER LINE TO MATCH HISTORIC SHORELINE
historic shoreline
PLUG AND GRADE OVER STRUCTURE IF EXISTING DRAINS ARE ABANDONED
Brookline Ave
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 3 OPTIONS 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
NEW TOP OF BANK
REMOVE EXISTING 72" CONCRETE DRAINS
APPROXIMATE LOCATION OF WATER LINE TO MATCH HISTORIC SHORELINE
WATER LINE ALIGNMENT MODIFIED FROM HISTORIC SHORELINE
Riverway
NEW TRAPEZOIDAL CHANNEL

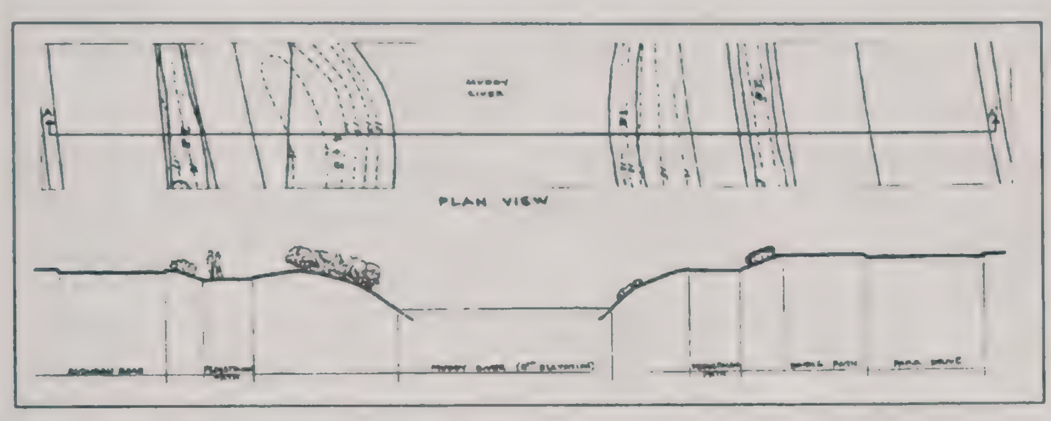
- Abandon or maintain existing drains
- Construct new open channel with water line location modified from historic shoreline



TYPICAL DAYLIGHT SECTION

SCALE: HOR. 1"=20'
VERT. 1"=20'

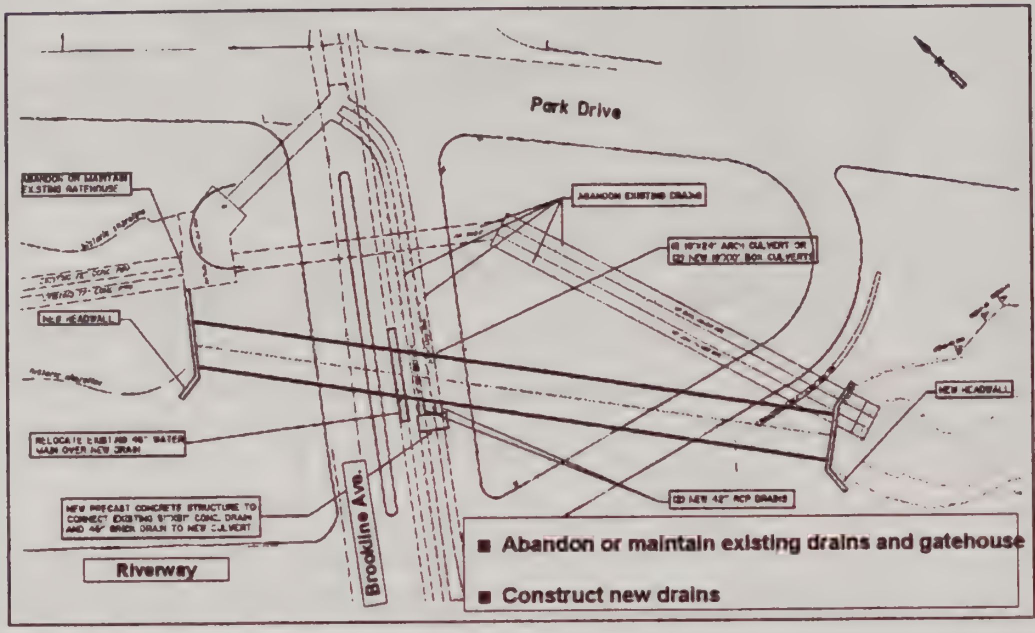
Channel Section A – A
Olmstead Topographical Plan for Planting Study (1893)



Sears Parking Lot Summary

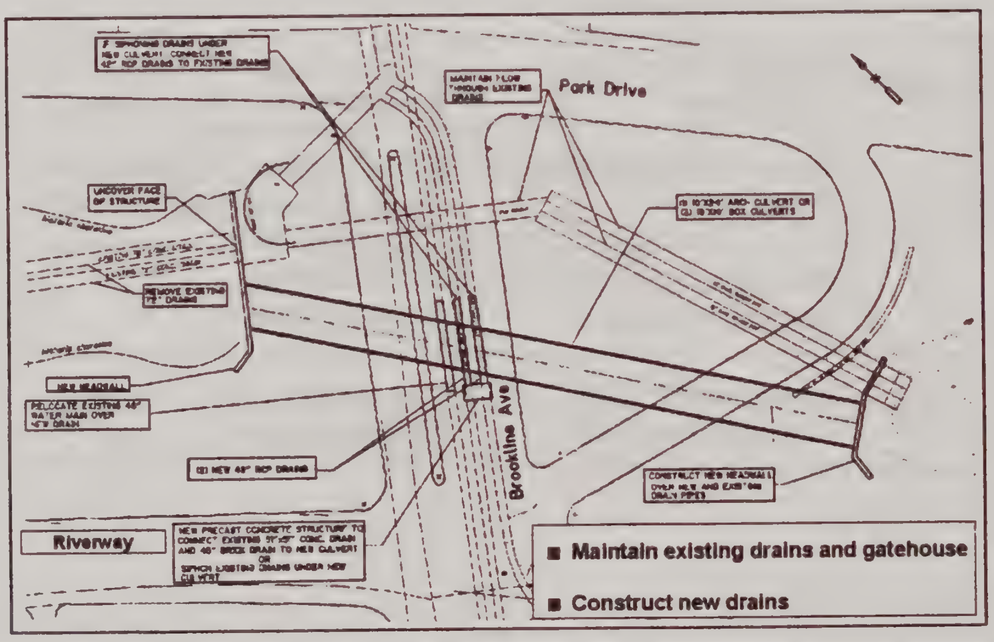
Options	Historic Landscape Resources	Operations & Maintenance	Differential Cost
1	Does not follow historic shoreline	Equivalent to other options	Least Costly by $100,000
2	Closely aligns with historic shoreline	Equivalent to other options	
3	Modifies alignment of historic shoreline	Equivalent to other options	

Brookline Avenue
Option No. 1


Park Drive
ABANDON OR MAINTAIN EXISTING GATEHOUSE
ABANDON EXISTING DRAINS
(1) 10'x24' ARCH CULVERT OR (2) NEW 10'x20' BOX CULVERTS
NEW HEADWALL
NEW HEADWALL
RELOCATE EXISTING 48" WATER MAIN OVER NEW DRAIN
(2) NEW 42" RCP DRAINS
NEW PRECAST CONCRETE STRUCTURE TO CONNECT EXISTING 51"x57" CONC. DRAIN AND 40" BRICK DRAIN TO NEW CULVERT
Riverway
Brookline Ave.

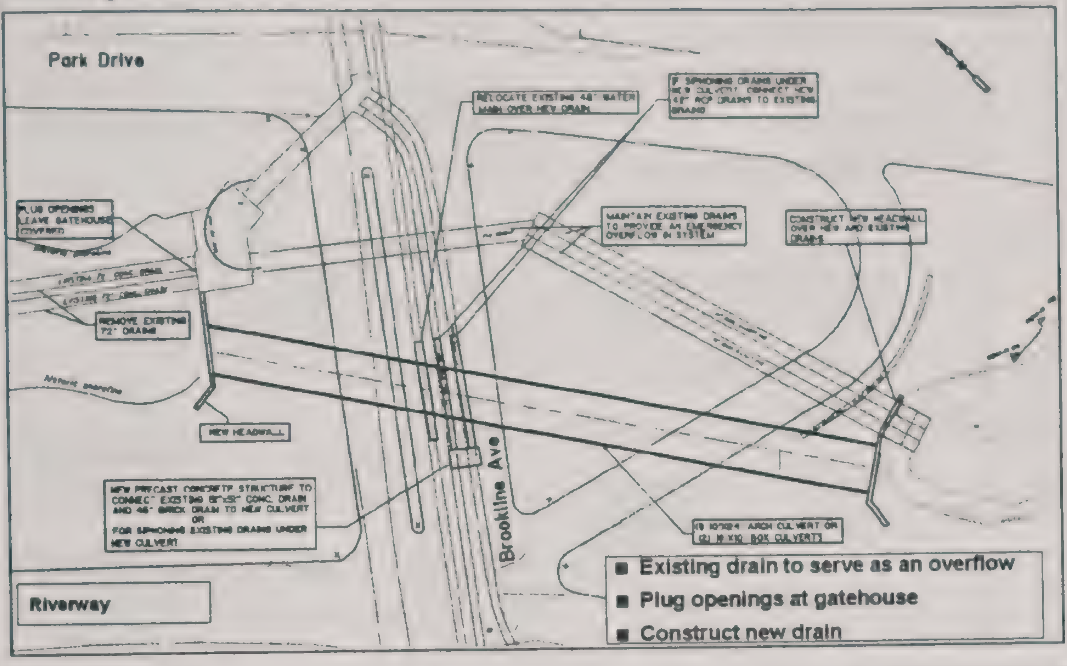
- Abandon or maintain existing drains and gatehouse
- Construct new drains

Brookline Avenue
Option No. 2


(2) SIPHONING DRAINS UNDER NEW CULVERT. CONNECT NEW 42" RCP DRAINS TO EXISTING DRAINS
MAINTAIN FLOW THROUGH EXISTING DRAINS
Park Drive
UNCOVER FACE OF STRUCTURE
(1) 10'x24' ARCH CULVERT OR (2) 10'x20' BOX CULVERTS
REMOVE EXISTING 72" DRAINS
NEW HEADWALL
RELOCATE EXISTING 48" WATER MAIN OVER NEW DRAIN
(2) NEW 48" RCP DRAINS
CONSTRUCT NEW HEADWALL OVER NEW AND EXISTING DRAIN PIPES
Riverway
NEW PRECAST CONCRETE STRUCTURE TO CONNECT EXISTING 51"x57" CONC. DRAIN AND 40" BRICK DRAIN TO NEW CULVERT OR SIPHON EXISTING DRAINS UNDER NEW CULVERT
Brookline Ave

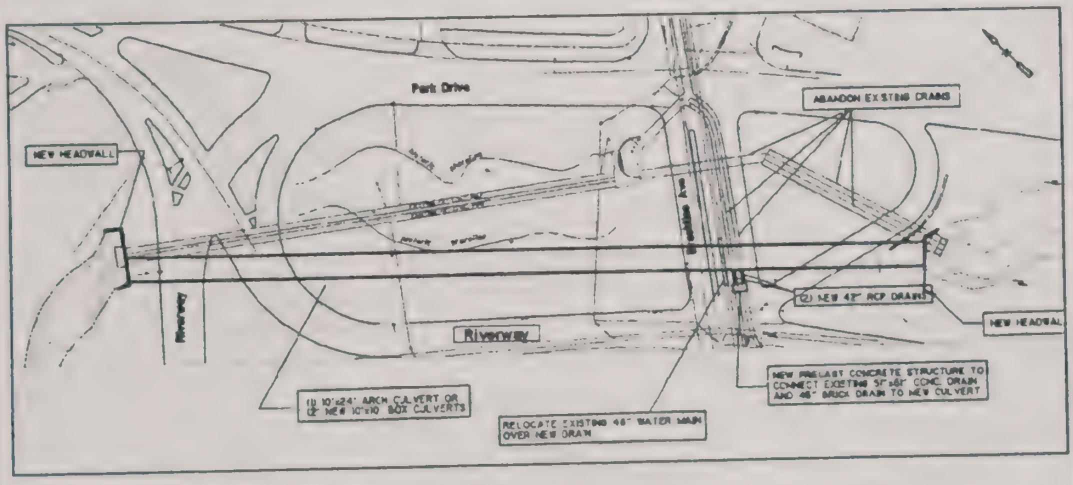
- Maintain existing drains and gatehouse
- Construct new drains

Brookline Avenue
Option No. 3


Park Drive
RELOCATE EXISTING 48" WATER MAIN OVER NEW DRAIN
IF SIPHONING DRAINS UNDER NEW CULVERT, CONNECT NEW 42" RCP DRAINS TO EXISTING DRAINS
PLUG OPENINGS LEAVE GATEHOUSE COVERED
MAINTAIN EXISTING DRAINS TO PROVIDE AN EMERGENCY OVERFLOW IN SYSTEM
CONSTRUCT NEW HEADWALL OVER NEW AND EXISTING DRAINS
REMOVE EXISTING 72" DRAINS
NEW HEADWALL
NEW PRECAST CONCRETE STRUCTURE TO CONNECT EXISTING 51"x51" CONC. DRAIN AND 46" BRICK DRAIN TO NEW CULVERT OR FOR SIPHONING EXISTING DRAINS UNDER NEW CULVERT
(1) 10'X24' ARCH CULVERT OR (2) 10'X10' BOX CULVERTS
Brookline Ave
Riverway

- Existing drain to serve as an overflow
- Plug openings at gatehouse
- Construct new drain

Brookline Avenue
Option No. 4

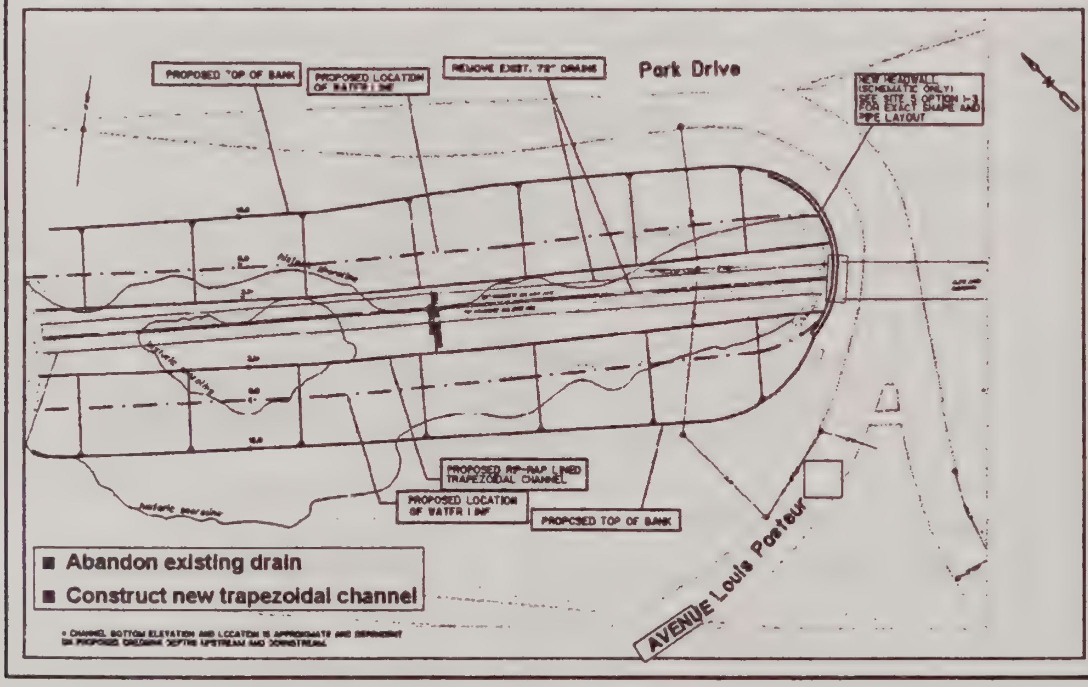

Park Drive
ABANDON EXISTING DRAINS
NEW HEADWALL
Brookline Ave
Riverway
(2) NEW 42" RCP DRAINS
NEW HEADWALL
Riverway
NEW PRECAST CONCRETE STRUCTURE TO CONNECT EXISTING 51"x51" CONC. DRAIN AND 46" BRICK DRAIN TO NEW CULVERT
(1) 10'x24' ARCH CULVERT OR (2) NEW 10'x10' BOX CULVERTS
RELOCATE EXISTING 48" WATER MAIN OVER NEW DRAIN

- Abandon existing drains and gatehouse
- Construct new drains

Brookline Avenue Summary

Options	Historic Landscape Resources	Operation & Maintenance	Differential Cost
1	Aligns with historic shoreline Gatehouse façade exposed	Slightly reduces flow in Muddy River Cond.	Less costly by $200,000
2	Aligns with historic shoreline-upstream Gatehouse façade exposed	Slightly reduces flow in Muddy River Cond.	Equivalent to option 3
3	Aligns with historic shoreline-upstream	Slightly reduces flow in Muddy River Cond.	Equivalent to option 2
4	No daylighting	Slightly reduces flow in Muddy River Cond.	More costly by $1,000,000

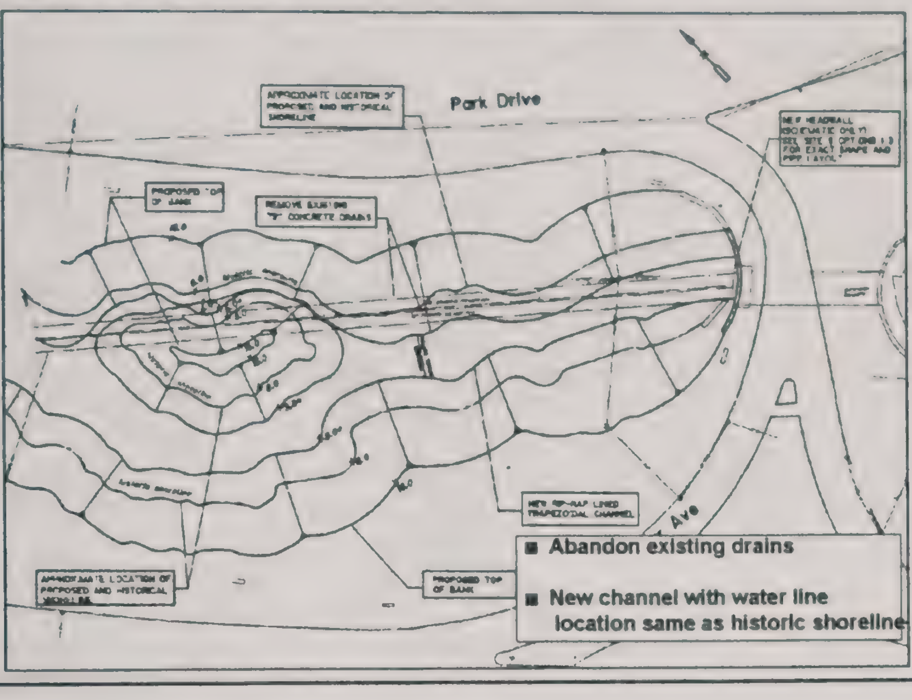
Upstream of Fens Bridge Option No. 1 (from U.S. Army Corps of Engineers)


PROPOSED TOP OF BANK
PROPOSED LOCATION OF WATER LINE
REMOVE EXIST. 72" DRAINS
Park Drive
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 5 OPTION 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
historic shoreline
historic shoreline
historic shoreline
PROPOSED RIP-RAP LINED TRAPEZOIDAL CHANNEL
PROPOSED LOCATION OF WATER LINE
PROPOSED TOP OF BANK
AVENUE Louis Pasteur

- Abandon existing drain
- Construct new trapezoidal channel

* CHANNEL BOTTOM ELEVATION AND LOCATION IS APPROXIMATE AND DEPENDENT ON PROPOSED DREDGING DEPTHS UPSTREAM AND DOWNSTREAM.

Upstream of Fens Bridge
Option No. 2


APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
Park Drive
NEW HEADWALL (SCHEMATIC ONLY) FOR EXACT SHAPE AND PIPE LAYOUT
PROPOSED TOP OF BANK
REMOVE EXISTING "T" CONCRETE DRAINS
NEW RIP-RAP LINED TRAPEZOIDAL CHANNEL
Ave
APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
PROPOSED TOP OF BANK

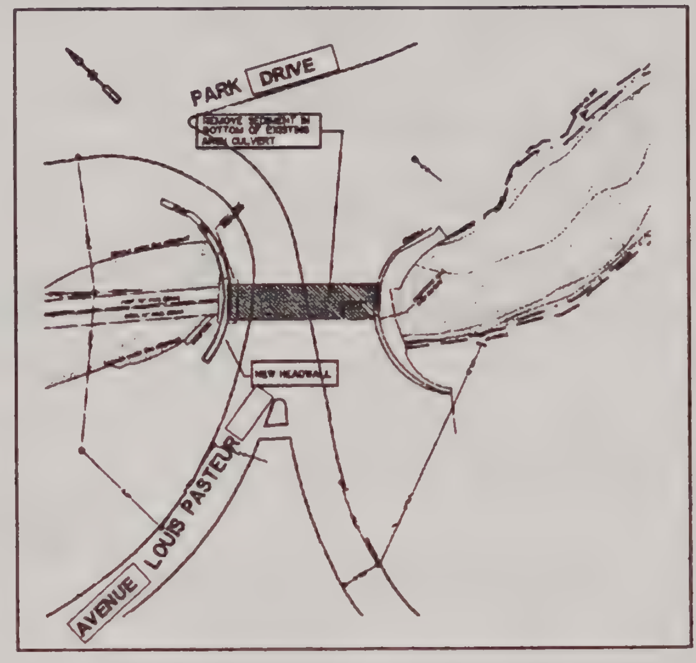
- Abandon existing drains
- New channel with water line location same as historic shoreline

Upsteam of Fens Bridge Summary

Options	Historic Landscape Resources	Operation & Maintenance	Differential Cost
1	Does not follow historic shoreline	Equivalent to other options	
2	Closely follows historic shoreline	Equivalent to other options	More Costly by $150,000

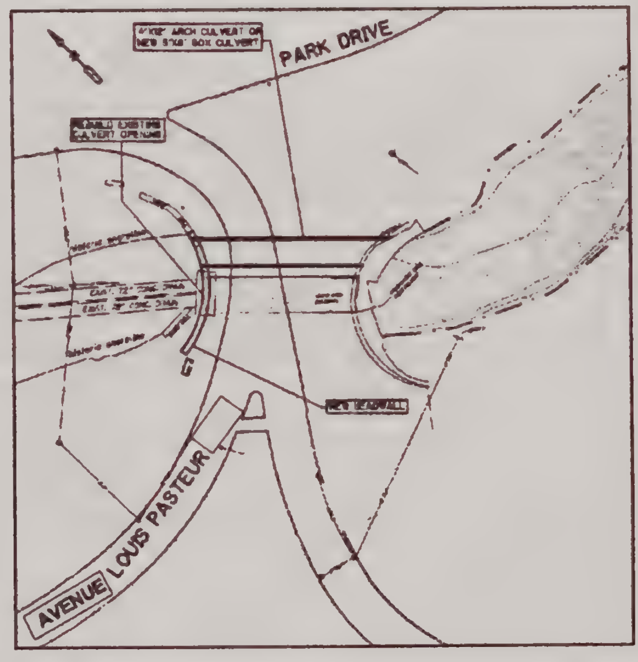
Fens Bridge Option No. 1

- Maintain existing arch culvert
- Dredge bottom of existing culvert



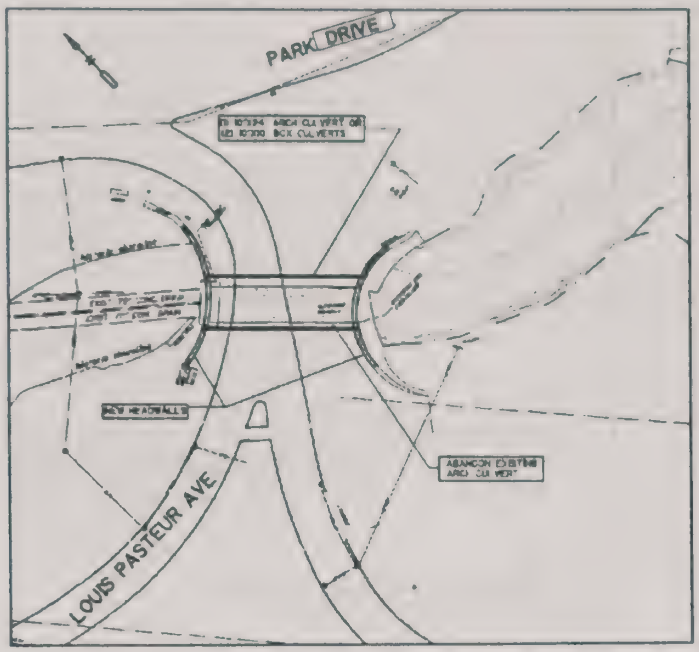
Fens Bridge Option No. 2

- Maintain existing arch culvert
- No dredging of existing culvert
- New box culvert or 4'x12' arch culvert alongside existing culvert


4'X12' ARCH CULVERT OR NEW 5'X8' BOX CULVERT
PARK DRIVE
REBUILD EXISTING CULVERT OPENING
NEW HEADWALL
AVENUE LOUIS PASTEUR

Fens Bridge Option No. 3

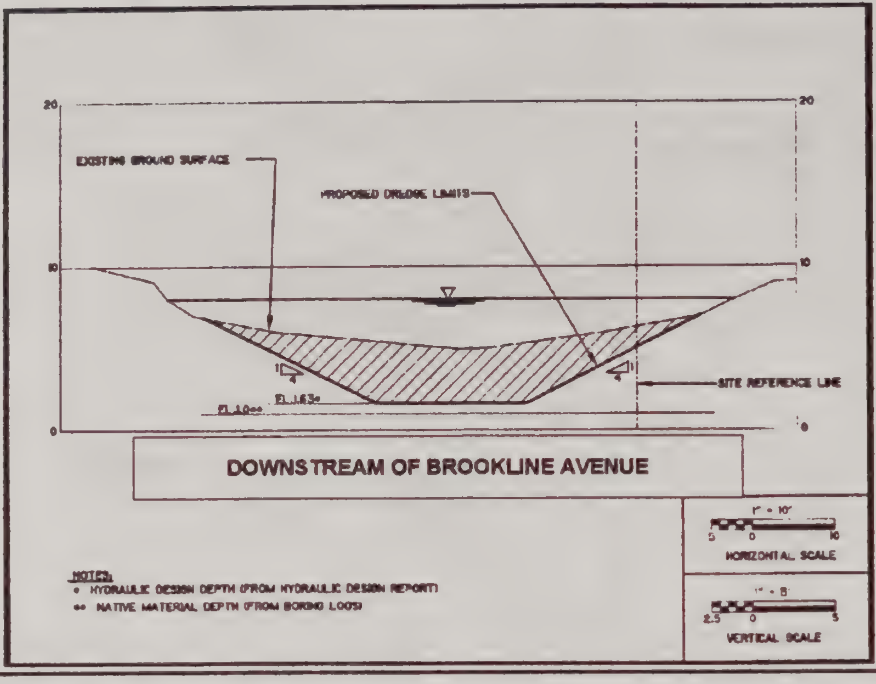
- Abandon existing arch culvert
- Construct two new 10'x10' box culverts or one 10'x24' arch culvert



Fens Bridge Summary

Options	Historic Landscape Resources	Operation & Maintenance	Differential Cost
1	Aligns with historic shoreline Retains/restores historic headwall	Equivalent to other options	
2	Aligns with historic shoreline Modifies historic headwall	Equivalent to other options	More costly by $700,000
3	Aligns with historic shoreline Lose historic headwall	Equivalent to other options	More costly by $1,000,000

Proposed Preliminary Dredge Sections for Flood Control



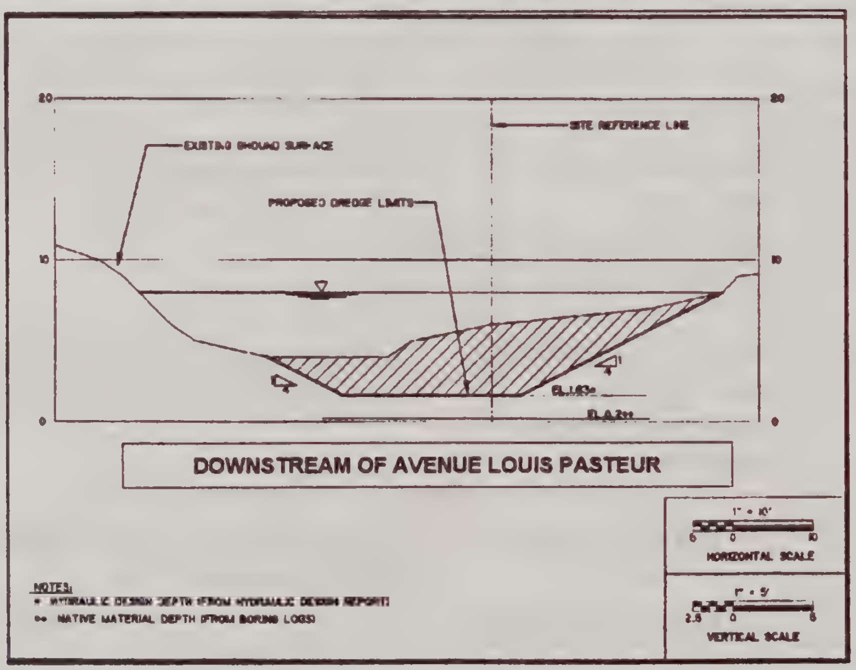
DOWNSTREAM OF BROOKLINE AVENUE

NOTES:

* HYDRAULIC DESIGN DEPTH (FROM HYDRAULIC DESIGN REPORT)

** NATIVE MATERIAL DEPTH (FROM BORING LOGS)

Proposed Preliminary Dredge Sections for Flood Control



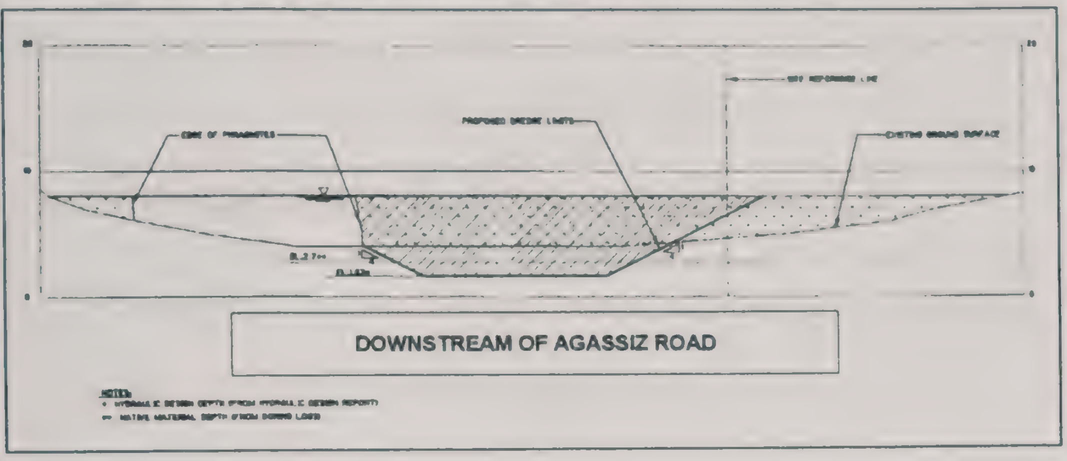
DOWNSTREAM OF AVENUE LOUIS PASTEUR

NOTES:

* HYDRAULIC DESIGN DEPTH (FROM HYDRAULIC DESIGN REPORT)

** NATIVE MATERIAL DEPTH (FROM BORING LOGS)

Proposed Preliminary Dredge Sections for Flood Control



Questions

- Does the CAC want to add other drainage improvement alternatives for consideration?
- Does the CAC agree with the consultants recommended approach for drainage infrastructure?

Questions and Answers

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – September 19, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I **Welcome, Opening Remarks & Comments Received**
Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager

II **Project Update**
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

III **CAC Discussion of Statement on Staging Areas**
Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

IV **Video: Hydraulic Dredging at Hardy Pond, Waltham**

V **Presentation: Culvert/Open Channel/Dredge/Disposal**
Bruce R. Conklin, P.E., Project Manager
Camp Dresser & McKee Inc. (CDM)

Q&A/Discussion with CAC

VI **Questions and Answers (General Public) Wrap Up**

Summary

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian opened the meeting and welcomed CAC members.

John Burckardt informed the CAC that Roscoe Sandlin is resigning from the CAC. MEPA will discuss a replacement for Roscoe with the City of Boston.

Isabella Callanan informed the CAC that she would submit a letter expressing concerns over the proposed use of Netherlands Road as a staging area.

II Project Update

Bruce Conklin provided the following project update for activities undertaken in August and September respectively.

August

- The sediment sampling program is 90% complete
- Presentation of dredging and staging area alternatives was made to the CAC
- The documentation of all historical plans is complete
- The documentation of the existing conditions is ongoing
- VHB has completed the assessment of all bridges in the project area
- Culvert alternatives have been identified and are being evaluated

September

- The sediment sampling program was completed
- The wetlands delineations are completed and the hearings with the conservation commissions in Boston and Brookline have been scheduled
- The project team has met with the Boston Transportation Department, MDC and the Town of Brookline to review truck alternative routes

III CAC Discussion of Statements on Staging Areas

Susan Jeghelian reviewed the proposed statement that was previously mailed to CAC members and is included here as Attachment 2. Ms. Jeghelian added that the statement reflects the CAC's input from the August 22, 2000 CAC meeting. Ms. Jeghelian further added that the purpose of the statement is to provide guidance to the project team with respect to the staging areas as they proceed with the design.

Draft Statement on Evaluation Criteria for Staging Area Selection

A CAC member asked what other construction activity will take place in addition to dredging.

Mr. Conklin responded that construction activities will mainly include culverts, landscape restoration and potentially bridge rehabilitation.

Several CAC members commented that there was redundancy among the criteria and recommended that they be reduced. A separate bullet for historic resources was also requested. Based on the CAC's comments, the final statement reads as follows:

The CAC supports the use of the following evaluation criteria that are used in the project design consultant's analysis of dredging alternatives and potential staging area locations (presented in alphabetical order):

- *Bank disturbance*
- *Bridge and other height constraints*
- *Construction related truck traffic*
- *Ecological impacts*
- *Habitat impacts*

- *Historic resource impacts*
- *Neighborhood traffic impacts*
- *Odors and noise impacts*
- *Park use impacts*
- *Pedestrian circulation*

Draft Statement on Dredging Method Selection

A CAC member asked if hydraulic dredging could work for removal of *Phragmites*. Jim Winkler responded that the *Phragmites* root mass is too heavy for hydraulic dredging cutter heads. He added that CDM is evaluating various techniques that involve floating excavation equipment.

A CAC member suggested modification to the statement, replacing the words "*Phragmites* removal" with "invasive species". Other CAC members agreed and the revised final statement reads as follows:

The CAC recommends that hydraulic dredging is the preferred alternative with the exception of invasive species.

Draft Statement on Staging Area Use

There were comments on the use of the word "construction". Some CAC members felt that it would be more appropriate to replace this word with "dredging". Based on CAC member comments, the statement was revised to read as follows:

The CAC recognizes that staging areas are needed to enable and support construction of Muddy River improvements. The CAC understands the number of staging areas needed depends on the improvements to be constructed and the dredging alternative utilized. The CAC also requests that the fewest possible staging areas be used for the shortest duration feasible. To this end, the CAC also supports the use of hydraulic dredging where dredging is necessary to minimize impacts on banks, shorten staging area use, and to control exposure to sediments.

Draft Statement on Selection and Evaluation of Staging Areas

A CAC member asked what will be the minimum number of staging areas required. Mr. Conklin responded that 6 sites would be a minimum.

A CAC member asked if the Agassiz Road site would be eliminated from consideration. Mr. Conklin responded that the project team wants to further evaluate the traffic and emergency access impacts. He further added that the project team would accommodate pedestrian access around the staging area.

A CAC member asked if Evans Way Park is a suitable alternative to Agassiz Road. Mr. Conklin commented that he is concerned that this site is not adjacent to the river and that piping would have to be laid across the Fenway. Also, construction traffic between the staging area location and the dredging location would become a problem. Mr. Conklin further added that Evans Way Park is close to the Lagoon, another site under consideration, and it does not offer any advantages to the Lagoon site.

The CAC agreed that the draft statement did not need any revisions and it stands as follows:

The CAC supports the evaluation and analysis of the following locations, one or more of which could potentially be used as a staging area during construction of Muddy River improvements.

1. *Charlesgate*
2. *Agassiz Road*
3. *Duck House*
4. *Lagoon (Jersey Street)*
5. *Clemente Field*
6. *Evans Way Park*
7. *Fens at Louis Pasteur*
8. *Former Sears Parking Lot*
9. *Netherlands Road*
10. *Daisy Field*
11. *Former MDC Kelly Rink*

The CAC, at this time, does not specifically endorse the use of any of the above referenced locations for use as a staging area until it reviews the complete impact evaluation on each site that will be presented in the Draft Environmental Impact Report.

IV Video: Hydraulic Dredging at Hardy Pond, Waltham

Bruce Conklin introduced the video and briefly explained the scope of the project at Hardy Pond in Waltham. Mr. Conklin then showed the video and explained the hydraulic dredging process for the CAC members. Mr. Conklin reiterated the benefits of hydraulic dredging and explained how it is an extremely nice technology application for this project.

Mr. Conklin explained that it takes approximately between 5 and 10 minutes from the time dredged material is pumped to the staging area, processed and loaded into container trucks for disposal. He added that it takes approximately 1 hour to fill a container truck with processed dredged material.

Mr. Conklin stated that the de-watering operation is the limiting factor in a dredging operation. The capacity of the de-watering equipment at a given staging area will dictate the amount of dredging that can be conducted. Mr. Conklin reiterated that the staging areas were selected not on the amount of material that could be processed from the sites but on their proximity to the River and the ability to pump dredged material from the River to the staging area.

A CAC member asked if Agassiz Road and Duck House staging areas were used, what would be the limits of the dredging that could be supported from these locations. Mr. Conklin responded that these two areas could support dredging from the Mass Pike upstream to approximately the Lagoon.

Mr. Conklin added that the staging area shown at Hardy Pond is approximately a half- acre. At Hardy Pond, hydraulic dredging reduces the staging area requirement by 75% compared to the land area requirements for mechanical dredging.

A CAC member asked if public roads or private property would be used for storing trucks that will be filled with processed dredged material. Mr. Conklin responded that contractors often rent private property nearby to store trucks and other equipment that they cannot store at the staging areas. He commented that the project team will be looking at this issue more closely.

A CAC member asked if the project team would elaborate on the use of the Lagoon area. Mr. Conklin explained that the contractor would lay a layer of gravel over the area that will be used for the staging. No trees would be removed from any of the proposed staging areas, however some tree pruning may be necessary.

V Presentation: Culvert/Open Channel/Dredge/Disposal

The slide presentation on the culvert, open channel, dredge and disposal alternatives is included as Attachment 3. Mr. Conklin summarized the objectives of the presentation, which were to:

- present the hydraulic basis of drainage improvements;
- review drainage improvements alternatives by river segment;
- present a summary evaluation of the advantages and disadvantages of the alternatives; and
- present dredging cross sections to better illustrate post-dredge river profiles.

Mr. Conklin explained that there are five sites along the river where culvert and open channel alternatives have been identified and evaluated. Listed below is a summary of the site locations and discussion regarding each of the alternatives at each site location.

Riverway Culvert Alternatives

What is the absolute cost of the recommended Riverway culvert option?

Mr. Conklin responded that the preliminary cost estimate of the recommended option for the Riverway culvert is approximately $2 million.

What is the design storm that the culvert alternatives were based upon?

Mr. Conklin responded that the culvert designs are based on using the October 1996 storm as the design storm.

Former Sears Lot Alternatives

Mr. Conklin presented the three proposed culvert alternatives at the former Sears lot site. He stated that the preliminary estimated cost of the recommended alternative is approximately $1.5 - $2.0 million.

Several CAC members commented that the proposed alternatives for the Sears lot raise important issues about the character of headwalls and the importance of meeting historic resources goals.

Mr. Conklin responded that headwall design is an important issue and this will be addressed by the CAC during upcoming CAC meetings on the detailed design. Regarding the historic resource issues of the Sears lot alternatives, Marion Pressley added that the project team views this alternative as a rehabilitation that will attempt to reconstruct the water's edge and plantings as close as possible to what was designed by Olmsted. She noted that the current water elevation is 2 to 3 feet lower than it was in Olmsted's time.

A CAC member commented that we will always have this issue of the slope of the banks due to the reduction in the water level. Another CAC member added that this calls into question the importance or significance of even trying to restore to Olmsted's original design.

Brookline Avenue Alternatives
There was no CAC discussion on the Brookline Avenue alternatives.

Upstream of Fens Bridge Alternatives
Mr. Conklin stated that the preliminary project cost for the recommended alternative is approximately $1 million.

Fens Bridge Alternatives
Mr. Conklin stated that the preliminary project cost for the recommended alternative is approximately $200,000 - $300,000.

Q&A/Discussion with CAC

Is flood control the only justification for dredging?

Mr. Conklin reported that in some areas *Phragmites* do not have to be removed for flood control purposes but because they are located in areas of poor sediment quality, there removal may be able to be justified based on water quality benefits.

A CAC member added that the ENF specifically called for bank-to-bank dredging.

Mr. Conklin added that the project team's goal is bank to bank dredging but he added that *Phragmites* removal has to be justified in accordance with the Wetlands Protection Act.

How does the Emmanuel College drain relieve flow to the Muddy River Conduit?

Mr. Conklin stated that presently the Emmanuel College drain is upstream of the Muddy River Conduit (MRC). The Emmanuel College drain traverses under Brookline Avenue where it outlets or discharges to the MRC. Connecting the Emmanuel Drain into the Muddy River so it discharges to the Back Bay Fens would also provide capacity in the MRC to accept other tributary flows.

Water quality and sediment sampling at the outlet of the Emmanuel College drain indicates some of the highest levels of contamination along the Muddy River occur at this location.

Mr. Conklin stated that the water quality sampling conducted for the project does not support the assertion. However sediment sampling results in the River at the Emmanuel drain outlet indicate poor sediment quality at this location.

If dredging was conducted just for flood control purposes, what would happen to the transport of sediments in the river that are not removed?

Mr. Conklin stated that the project team is conducting some sediment transport analysis to understand this issue. He added that if the project results in removal of the sediments as prescribed in the ENF, this would not be an issue.

If accumulated sediments are left in the river would it result in a reduction in the duration of the life cycle flood control benefit?

Mr. Conklin responded that there would likely be a reduction in the life cycle flood control benefit. Mr. Conklin added that the incremental costs of removing all of the sediments could be calculated.

What is the relationship between flows out of the MRC and flows through the Fens. Can water flow be controlled? Can additional water be passed through the Fens?

Mr. Conklin explained the purpose of the Brookline Avenue gatehouse and explained how the gate is presently set so that Muddy River flow passes through the Back Bay Fens and only overflows from the river discharge to the MRC.

Did the project team consider a bridge at Brookline Avenue?

Mr. Conklin responded that a bridge was not considered because of the cost and its effect on traffic, particularly at the Sears rotary or "jug handle". He added the design team will consider a bridge alternative, and he will report on it to the CAC at the next meeting (September 28th).

A CAC member commented that there may be a good reason not to completely dredge the river because of the impact dredging will have on the benthic habitat.

A CAC member asked if the project team will conduct a benthic habitat assessment. The member added that the Army Corps of Engineers conducted a benthic habitat assessment in the mid-1990s.

Mr. Conklin stated that an assessment of the benthic habitat will be included in the Draft Environmental Impact Report. Mr. Conklin added that there will be impacts to the benthic habitat but that they will restore themselves because the benthic community will not be completely impacted by the dredging. For example, areas under culverts and small bridges may not be fully dredged.

A CAC member asked to clarify if the 50-year life of the improvements means in 50 years it will return to its current state or if there will be 50 years of a viable river.

Mr. Conklin explained that it would take approximately 50 years to redeposit the amount of sediment that is proposed to be removed during the dredging. Mr. Conklin added that with the Best Management Practices (BMPs) in place, the rate of disposition is expected to be reduced and the life of the improvements would be extended.

A CAC member emphasized that the inevitable re-sedimentation of the river underscores the importance of source control and BMPs.

A CAC member added that the existing structures (i.e. Fens Gatehouses) contribute to the historic resources of the landscape and the project team should consider retaining existing historic structures.

CAC Discussion Questions

The following questions were posed to the CAC. CAC comments on each immediately follow.

1. Does the CAC want to add other drainage improvement alternatives for consideration.

The CAC requested that a bridge alternative at Brookline Avenue be reviewed.

Several CAC members stressed the importance of source control and BMPs and asked that the project team follow-up on the Charles River Watershed Association's concerns about source control.

Mr. Conklin responded that source controls and BMPs will be addressed again at the October 30 CAC meeting.

2. Does the CAC agree with the consultant's recommended approach for drainage infrastructure?

One CAC member asked that consideration of this question be postponed until the next CAC meeting on September 28, 2000.

Several CAC members commented that the flood control alternatives should be evaluated from the perspective and aesthetic of historic resources. They suggested that a sketch or photos would be very helpful to visualize the area.

Mr. Conklin responded by asking the CAC if they would be satisfied with sketches, renderings and other visuals during the detailed design phase of the project.

A CAC member asked how the project team will address constructibility and construction techniques and if there will be additional alternatives beyond the ones presented at this meeting.

Mr. Conklin briefly explained the requirements of the Environmental Impact Report (EIR) and the flexibility that will be available to deal with the historic context of the project. He also added that the project team will describe the construction process in the EIR and the impacts associated with it.

A CAC member asked to what degree is the final design of the recommended alternatives impacted by the CAC.

Mr. Conklin stated that if the CAC is comfortable with the conceptual design, the project team and the CAC can get into the details of each recommended alternative later in the process.

Will the EIR satisfy the requirements of Section 106 (historical resource planning)?

Marion Pressley responded yes.

Therefore, does the EIR have to demonstrate that it meets the federal and state historic standards?

Jay Cortell responded that the document will be a draft and it is not the end of the review process. Mr. Cortell further added that the burden of the draft report is to articulate impacts while the burden of the final environmental impact report is to revise the design and identify the mitigation measures that will be implemented.

VI Questions and Answers (General Public) Wrap Up

To what extent is the project team coordinating this project with the planning effort associated with the proposed new Fenway ballpark?

Fran Beatty noted that that the Boston Parks and Recreation Department is meeting with the Boston Transportation Department, MDC and Town of Brookline to review the traffic and other related issues. While there are studies by others of the traffic and possible changes, these are only proposals at this stage. Ms. Beatty added that, for now, the proposed improvements would be designed to the constraints of the existing curb lines.

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for Thursday, September 28, 2000. The meeting will be held in the Egan Engineering/Science Research Center in the Raytheon Amphitheater, Room 240.

The meeting will focus on a presentation of the sediment characteristics, sediment disposal options, dredge methodology, invasive species removal and truck haul routes.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – Draft CAC Discussion Statement on Staging Areas
Attachment 3 – CDM Consultant Team Presentation

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

September 19, 2000

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	Christine Cooper
Edward	Cutler	Brookline Resident	Ed Cutler
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	Frances Allou Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Emerald Necklace Citizens Advisory Committee

Meeting

September 19, 2000

Sign-In Shee

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	A Levee
John A.	Martin	Emerald Necklace Conservancy	John Martin
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	PM (JFB) *
Mary Crain	Penniman	Charles River Watershed Association	Mary Crain Penniman
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	MS (JFB) *
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

* Paul Mentag and Marion Sabal were at the meeting, although they did not sign in. JF Buckley

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

September 19, 2000

\\parksmail\bospark\Muddy\CAC Meetings\CAC-9 Sep 19, 2000\[CAC-9 Sign-In Sep 19,2000.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
MARION PRESSLEY	Pressley Assoc.	617-491-5300	
Fran Beatty	Bos Park ·	635-4505	
John Burckardt	PBOD/Boston Parks	635-4505	jburckardt@ci.boston.ma.us
Claire Fleury	garden Soc.	617 266-1169	
Ed Burke	BSW	536-1639	
Tom DeMAIO	Brookline	730-2156	
MARK P. SMITH	EOEA	626-1050	
Nancy S. Seasholes	1 Field Rd., Lex	781-863-8085	
Gina Crandell	Brookline	731-0503	crandell@gsd.harvard.edu
Janet Marnier	Boston Water + Sewer	443-9554	
JAY CORTELL	CORTELL ~~ASSOC~~.	781-890-3737x111	cortell@cortell.com
Richard Thibedeau	MADEM		
ALAN BANKS	F.L. OLMSTED NHS/NPS	617-566.1689	Alan_Banks@NPS.gov
JJ CALLAHAN	CORTELL and ASSOCIATES	(781) 890-3737 (x134)	
Carlton L Hayes	Cortell	781, 890-3737 (x128)	
Jacquelyn L Hilkins	Cortell & Assoc	781-890-3737 x127	
Michelle Lippiatt	Mass. comm. WaterWatch	617-747-4409	
Brian Buckley	CDM Inc.	617-452-6554	

Emerald Necklace Citizens Advisory Committee

Meeting

September 19, 2000

Sign-In Sheet

\\parksmain\bospark\Muddy\CAC Meetings\CAC-9 Sep 19, 2000\[CAC-9 Sign-in Sep 19,2000.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Bob McDonnell	N.U.	373-5522	
Maureen Twombly	NU	373-5500	mtwombly@lynx.neu.
Erin Chute	Brookline Conservation	730-2088	erin_chute@town.brookli ma.us
David Mendelsohn	EOEA/DEM	573-8772	David.mendelsohn @state.ma.us
Jan Henderson	MASCO	632-2762	henderson@masco2. harvard.edu
Jade Cummings	Harvard / GSD		jcummings@gsd.harvard.ed
Matthew Tucker	Harvard University/GSD		mtucker@gsd.harvard.edu.
Harriet F. Koch	Friends of Sargent Pond	277-2151	hfjpkoch@ma →med.net
Susan Geghehan	MODR	727-2224 x21174	

MEMORANDUM

DATE: September 20, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**; Other Information

NOTE: 2ND MEETING IN SEPTEMBER

PLEASE ALSO NOTE THE MEETING LOCATION!

Thursday, September 28, 2000

Northeastern University

Egan Engineering /Science Research Center

Raytheon Amphitheater — Room 240

Forsyth Street (next to Ruggles Station)

Agenda Topics:
- Culverts/Daylighting: Overview of Approach to Historic Treatment
- Sediment Characteristics
- Dredged Material Disposal &Haul Routes
- Overview: Possible Methods of Invasives Removal

5:45 p.m.	**Refreshments**
6:00 p.m.	**Presentation & Discussion**
8:30 p.m.	**Adjourn**

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Other Attachments:

1. **GLOSSARY OF TERMS** - Definitions for September 28, 2000 CAC Meeting
Please add to Tab#5 of CAC Workbook

2. **ABBREVIATIONS,** REVISION **2** – Includes abbreviations to be used at September 28th CAC Meeting.
Please add to Tab#5 of CAC Workbook

Emerald Necklace Citizen's Advisory Committee

Northeastern University, Egan Engineering /Science Research Center

Raytheon Amphitheater — Room 240

Thursday, September 28, 2000
6:00p.m. - 8:30p.m

Agenda

I.	**Welcome, Opening Remarks & Comments Received** ***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator* ***John Burckardt**, Project Manager*	6:00 - 6:10
II.	**Follow-up Items from CAC Meeting, September 19, 2000** **a. Brookline Avenue bridge suggestion** ***Bruce R. Conklin, P. E.**, Vice President* *Camp Dresser & McKee Inc.* **b. Culverts: Overview of Approach to Historic Landscape Treatment** ***Marion Pressley, F.A.S.L.A.**, President* *Pressley Associates, Inc.*	6:10 – 6:45
III.	**Presentation: Sediment Characteristics/Dredge/Disposal/ Invasives Removal** ***Bruce R. Conklin, P. E.**, Vice President* *Camp Dresser & McKee Inc.* ***Joseph Wanat, P. E.**, Transportation Engineer* *VHB, Inc.* ***James H. Winkler, P. E.**, Manager of Design* *Camp Dresser & McKee Inc.*	6:45 – 7:45
	Q&A/Discussion with CAC	7:45 – 8:20
IV.	**Questions and Answers (General Public) Wrap Up**	8:20 – 8:30

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

ABBREVIATIONS

BDPW	Brookline Department of Public Works
BLC	Boston Landmarks Commission
BLSF	Bordering Land Subject to Flooding
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BP&R	Boston Parks & Recreation Department
BVW	Bordering Vegetated Wetlands
BWSC	Boston Water & Sewer Commission
CAC	Citizens Advisory Committee
cfs	Cubic feet per second
CB	Catch Basin
cm	Centimeter
CMR	Code of Massachusetts Regulations
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
cy	Cubic yards
DEIR	Draft Environmental Impact Report
DEM	Massachusetts Department of Environmental Management
DEP	Massachusetts Department of Environmental Protection
DO	Dissolved Oxygen
EIR	Environmental Impact Report
ENC	Emerald Necklace Conservancy
ENF	Environmental Notification Form
EOEA	Executive Office of Environmental Affairs
EPA	U.S. Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
FEIR	Final Environmental Impact Report
FEMA	U. S. Federal Emergency Management Agency
IPM	Integrated Pest Management

ABBREVIATIONS (Continued)

kg	Kilogram
LMA	Longwood Medical Area
LUW	Land Under Water
MDC	Metropolitan District Commission
MEMA	Massachusetts Emergency Management Agency
MEPA	Massachusetts Environmental Policy Act
Mg	Milligrams
Mg/kg	Milligrams per kilogram
MHC	Mass Historic Commission
MNHESP	Mass Natural heritage and Endangered Species Program
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O&M	Operations and Maintenance
OoC	Order of Conditions
PAHs	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PCBs	Polychlorinated biphenols
PHCs	Petroleum Hydrocarbons
POTW	Publicly Owned Treatment Works
RCRA	Resources Conservation Recovery Act
RDA	Request for Determination of Applicability
ROW	Restore Olmsted's Waterway
SOD	Sediment Oxygen Demand
TCLP	Toxic Characterization Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
USACE	U.S. Army Corps of Engineers
Umhos/cm	Micro mhos per centimeter
USGS	U.S. Geological Survey
VOCs	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbons

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

GLOSSARY OF TERMS

CONTINUED

Definitions for September 28, 2000 CAC Meeting

Conductivity – A measure of the ability to pass an electric current in a liquid. This indirectly measures the mineral content in a sample.

EPH – Extractable Petroleum Hydrocarbons , measure of contamination due to petroleum components extracted from a sample. Test is a Massachusetts DEP method.

Heavy molecular weight organic compounds – Complex organic compounds that do not volatilize, are persistent (or retained) in the environment and can potentially cause cancer risk.

Mg/kg – Milligrams per kilogram, these are the units of measurement and express milligrams of contaminant per kilogram of soil.

PCBs – Polychlorinated biphenols, a class of chemicals formed by chlorination of the biphenol molecule. Compounds are typically found in oils used in old electric transformers.

RCRA – Resource Conservation Recovery Act, a federal law that defines a hazardous waste and its disposal.

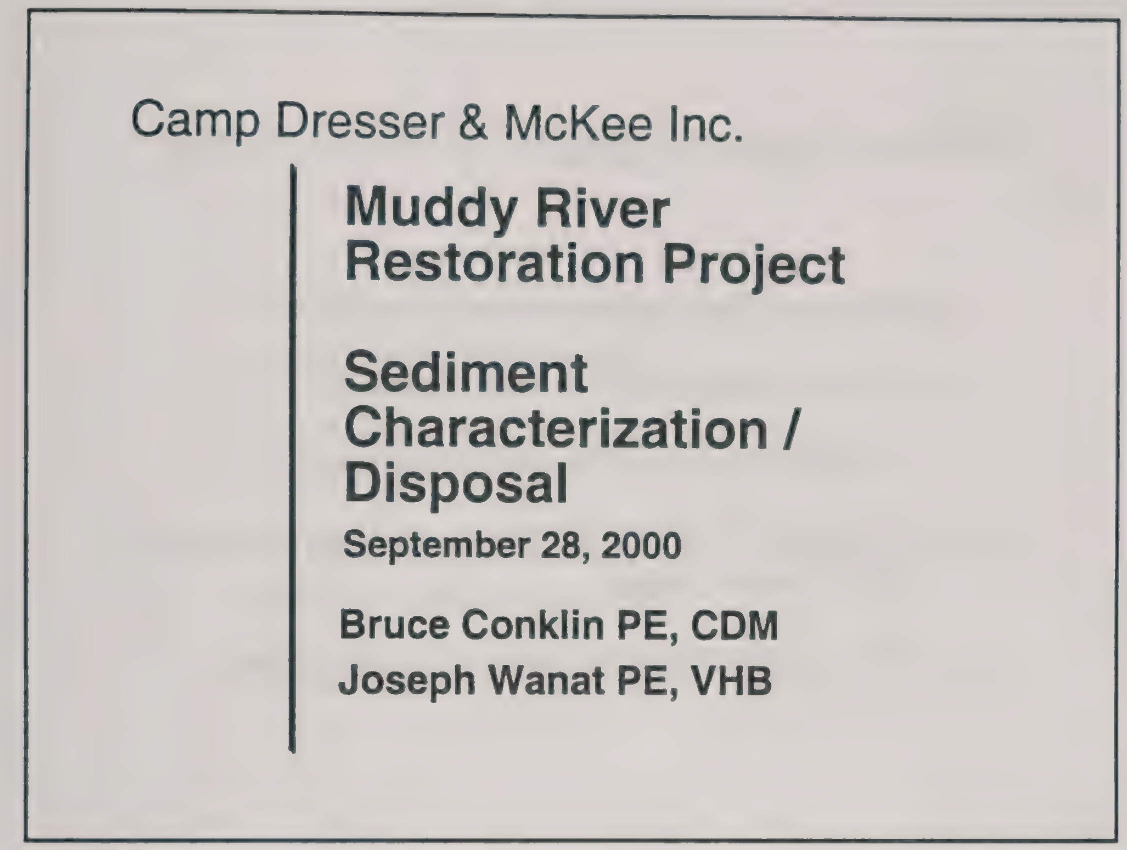
TCLP - Toxicity Characteristic Leaching Procedure, a method of measuring the mobility of organic and inorganic compounds that leach out of soil causing contamination of groundwater. If a compound exceeds this test limit it is likely to leach out of the soil and therefore has to be disposed in a hazardous waste landfill.

Umhos/cm – Micro mhos per centimeter, units for measuring conductivity.

VOC – Volatile Organic Compounds, organic compounds that tend to evaporate or volatilize from a sample. Compounds have a boiling point at a temperature of 200 degrees Celsius.

Volatilization – A process where a compound evaporates at normal ambient temperatures.

VPH – Volatile Petroleum Hydrocarbons, Massachusetts DEP method to measure contamination due to volatile petroleum compounds.



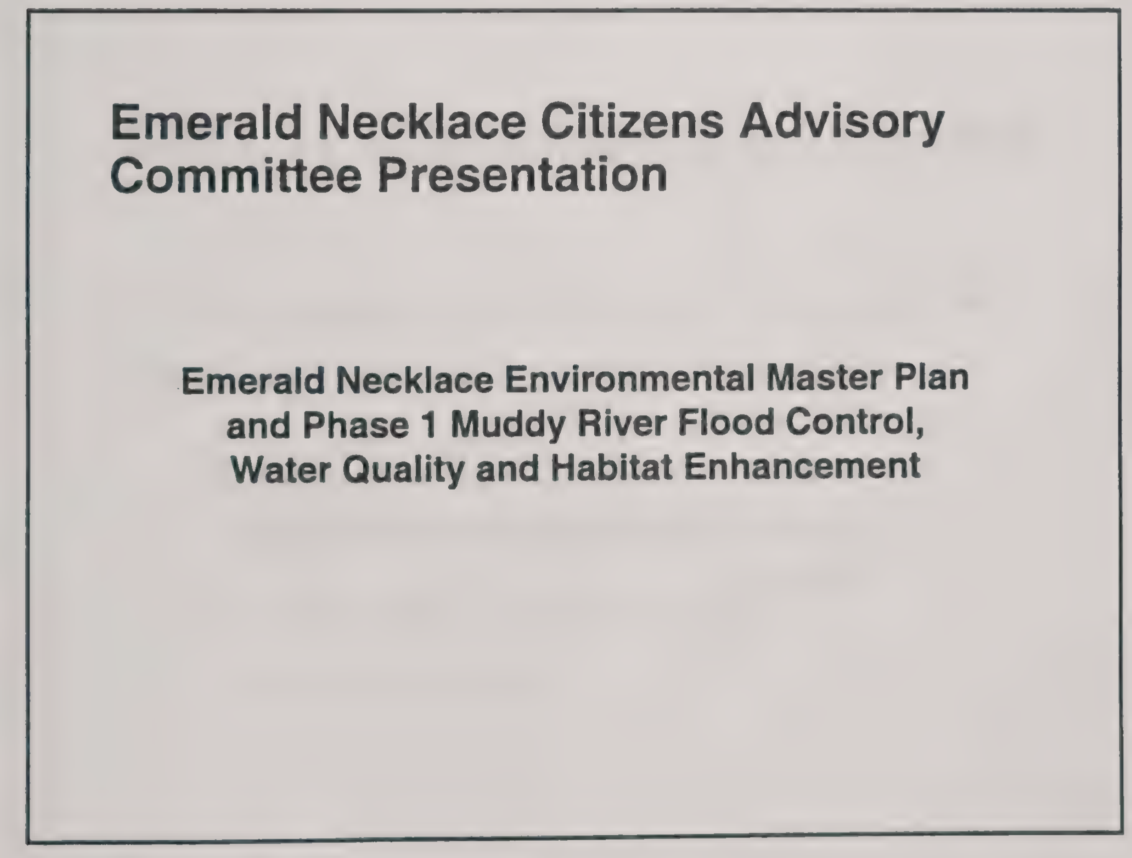
Camp Dresser & McKee Inc.

Muddy River Restoration Project

Sediment Characterization / Disposal

September 28, 2000

Bruce Conklin PE, CDM
Joseph Wanat PE, VHB



Emerald Necklace Citizens Advisory Committee Presentation

Emerald Necklace Environmental Master Plan and Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement

Meeting Objectives

- Present disposal options
- Present sediment sampling results
- Discuss sediment handling issues
- Obtain CAC views on proposed truck routes from staging areas
- Review phragmites removal operations

Sediment Sampling Program

- Objective
    - Sediment samples collected to determine subsurface conditions
    - to determine landfill disposal options
    - to meet landfill criteria for sampling frequency

Field Program Summary

- Samples collected of the fill and native material at 128 locations
- Approximately 360 samples have been collected
- Samples were collected at 2-ft depth intervals, generally from 0 to 8 feet
- Sampling identified native strata under river

In State Landfill Criteria

- Total cadmium < 30 mg/kg
- Total lead < 1000 mg/kg
- Total EPH < 2,500 mg/kg
- Total VOCs < 4 mg/kg
- Conductivity < 4,000 umhos/cm
- PCBc < 2 mg/kg

In State Lined Landfill Criteria

- Total cadmium < 80 mg/kg
- Total lead < 2,000 mg/kg
- Total EPH < 5, 000 mg/kg
- Total VOCs < 10 mg/kg
- Conductivity < 8,000 umhos/cm
- PCBs < 2 mg/kg

Out of State Landfill

- Parameter concentrations above MA landfill criteria
- Not a hazardous waste
- PCBs < 50 mg/kg

RCRA Landfill

- Above TCLP concentration limits
- PCBs < 500 mg/kg

These are hazardous wastes

Landfill Disposal Costs

- In State
  - Unlined $50/ton
  - Lined $60/ton
- Out of State $110/ton
- RCRA $250/ton

Map of Project with Colored Disposal Options Available by sampling location

Sediment Handling Issues

- Monitor air quality around exposed sediments (dewatering equipment), upgrade engineering controls if violated
- Monitor dust emissions, upgrade engineering controls if violated
- Engineering controls
  - Cover / tent dewatering equipment
  - Wet sediments / calcium chloride (working with wet sediments should prevent need for this control)
  - Use foam

Regional Truck Haul Routes

Purpose: Haul dewatered material from staging areas to final disposal location.

Truck Volumes: Approximately 10 to 20 truckloads per day in 18-wheel trucks (assuming hydraulic dredging method).

Alternatives Considered:

- I-93 (Expressway);
- Route 9 (Huntington Avenue / Bolyston Street);
- I-90 (Mass Pike).

Route Selection Considerations

- Low Bridge clearances and roadway geometry;
- Roadway capacity (ability to handle truck traffic);
- Truck turning radius (ability to make left/right turns);
- Sensitive corridors (residential oriented, parkways);
- Congested corridors;
- Travel times (ease of access/egress);
- Safety (avoid heavy pedestrian areas);
- Coordination with Boston Transportation Department (BTD)and the Metropolitan District Commission (MDC)

Hydraulic Dredging Staging Areas

- Charlesgate (1);
- Agassiz Road (2);
- Lagoon (Jersey Street) (4);
- Fens at Louis Pasteur (6);
- Netherlands Road (8);
- Daisy Field (9).

I-93 via Massachusetts Avenue

- Haul route to/from Charlesgate (1) staging area:
  - Follows Beacon Street and Commonwealth Avenue.
- Haul route from Agassiz Road (2) staging area to I-93:
  - Follows Fenway and Westland Avenue (outbound hauling only).

I-93 via Melnea Cass Boulevard/ Ruggles Street

- Haul route to/from:
  - Lagoon (Jersey Street) (4) staging area, and
  - Fens at Louis Prang (6) staging area.
- Haul route to Agassiz Road (2) staging area
- Follows Melnea Cass Boulevard, Tremont Street, Ruggles Street, Louis Prang Street, Fenway, Park Drive and Boylston Street.

Route 9 (Boylston Street)

- Haul route to/from Netherlands Road (8) staging area:
  - Follows Brookline Avenue, Aspinwall Street, and Netherlands Road, exit via Parkway Road to Brookline Avenue.
- Haul route to/from Daisy Field (9) staging area:
  - Follows Cypress Street, High Street, Chestnut Street, Pond Avenue, and Willow Pond Road.

Truck Route Conclusion

- Recommend use of I-93 as regional route for Charlesgate, Agassiz Road, Lagoon, and Fens at Louis Pasteur Staging Areas;
- Recommend use of Route 9 as regional route for Netherlands Road and Daisy Field Staging Areas;
- I-90 is not recommended as a primary route due to circuitous access/egress issues.

Questions

- Does the CAC agree with the consultants recommended truck route selection?
- Does CAC agree with consultants methodology for removing phragmites?

Questions and Answers

Charlesgate Staging Area (1)

- Optimal regional route - I-93 via Mass. Avenue
- Possible alternative - I-90 via Comm. Avenue/ Huntington Avenue
- Discarded options

  Route 9 via Brookline Avenue (congested route, through LMA, longer travel time, heavy pedestrian activity);

  Route 9 via Beacon Street/St. Paul Street (congested route, residential area, heavy pedestrian activity);

  Route 9 via Huntington Avenue (congested route, heavy pedestrian activity, upcoming Huntington Avenue reconstruction).

Agassiz Road Staging Area (2)

- Optimal regional route - I-93 via Mass. Avenue / Melnea Cass Boulevard
- Possible alternative - I-90 via Huntington Avenue
- Discarded options

  Route 9 via Brookline Avenue (congested route, through LMA, heavy pedestrian activity, longer travel time);

  Route 9 via Beacon Street/St. Paul Street (congested route, residential area);

  Route 9 via Huntington Avenue (congested route, heavy pedestrian activity, upcoming Huntington Avenue reconstruction).

Lagoon (Jersey Street) (4) and Fens at Louis Pasteur (6) Staging Areas

- Optimal regional route - I-93 via Ruggles Street/ Melnea Cass Boulevard
- Possible alternative - I-93 via Brookline Avenue/ Comm. Avenue/Mass. Avenue
- Discarded options

  I-90 via Huntington Avenue (upcoming Huntington Avenue reconstruction, heavy pedestrian activity)

  I-90 via Boylston Street (congested route, heavy pedestrian activity)

  I-90 via Commonwealth Avenue (heavy pedestrian activity, residential nature);

Lagoon (Jersey Street) (4) and Fens at Louis Pasteur (6) Staging Areas (con't)

- Discarded options (con't)

  Route 9 via Brookline Avenue (congested corridor, through LMA, travel time);

  Route 9 via Beacon Street/St. Paul Street (congested corridor, residential area);

  Route 9 via Riverway/Brookline Avenue (congested corridor, not truck-oriented).

Netherlands Road Staging Area (8)

- Optimal regional route - Route 9 via Brookline Avenue
- Possible alternative - I-93 via Huntington Avenue/ Tremont Street/ Melnea Cass Boulevard
- Discarded options

  All routes to I-90 (longer travel time, congested corridors, pedestrian concerns, upcoming Huntington Avenue reconstruction).

Daisy Field Staging Area (9)

- Optimal regional route - Route 9 via Cypress Street
- Possible alternative - Route 9 via Pond Avenue
- Discarded options

  All routes to I-90 and I-93 (longer travel time, congested corridors, pedestrian concerns, upcoming Huntington Avenue reconstruction).

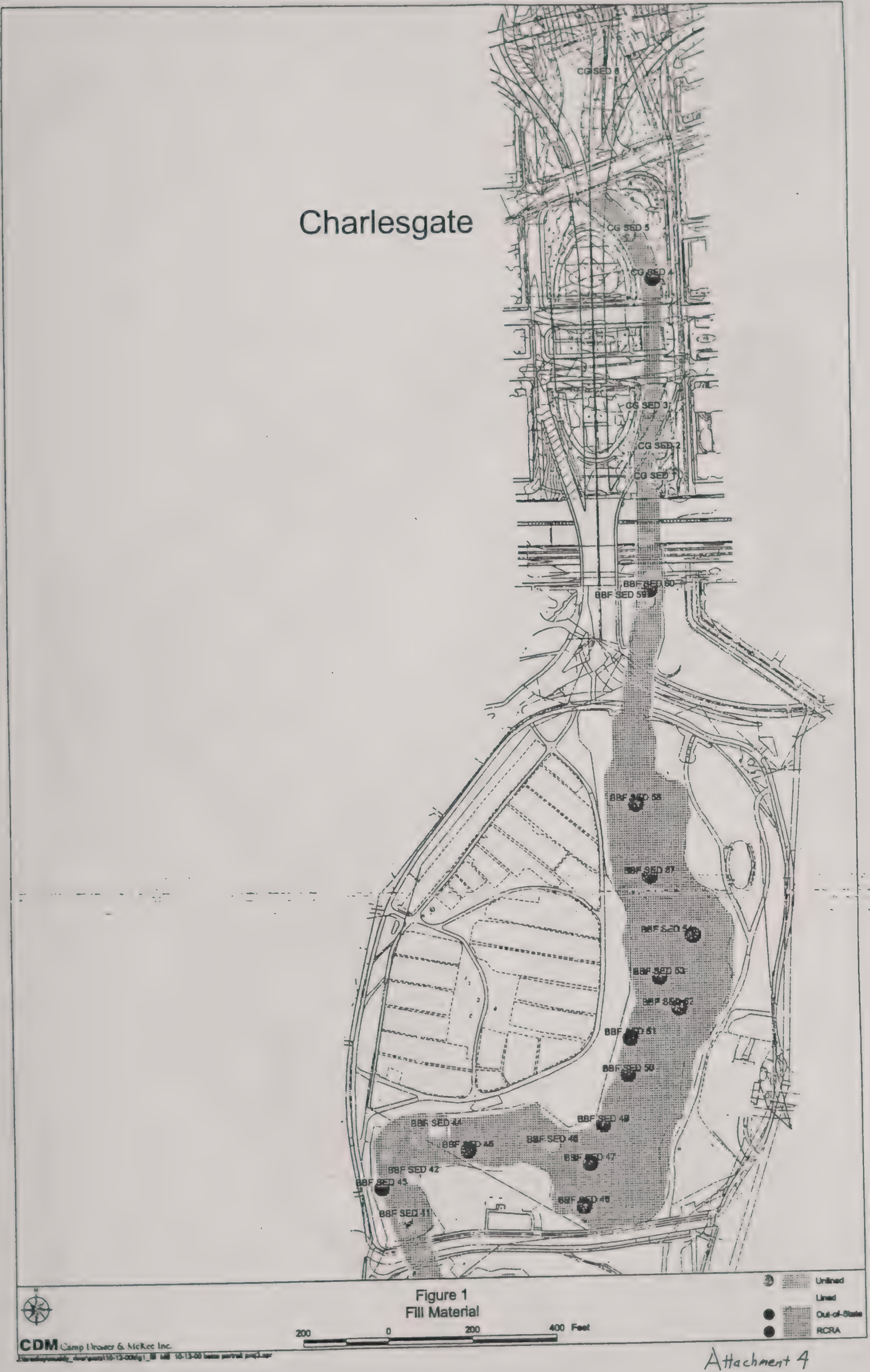


Figure 1
Fill Material

CDM Camp Dresser & McKee Inc.

Attachment 4

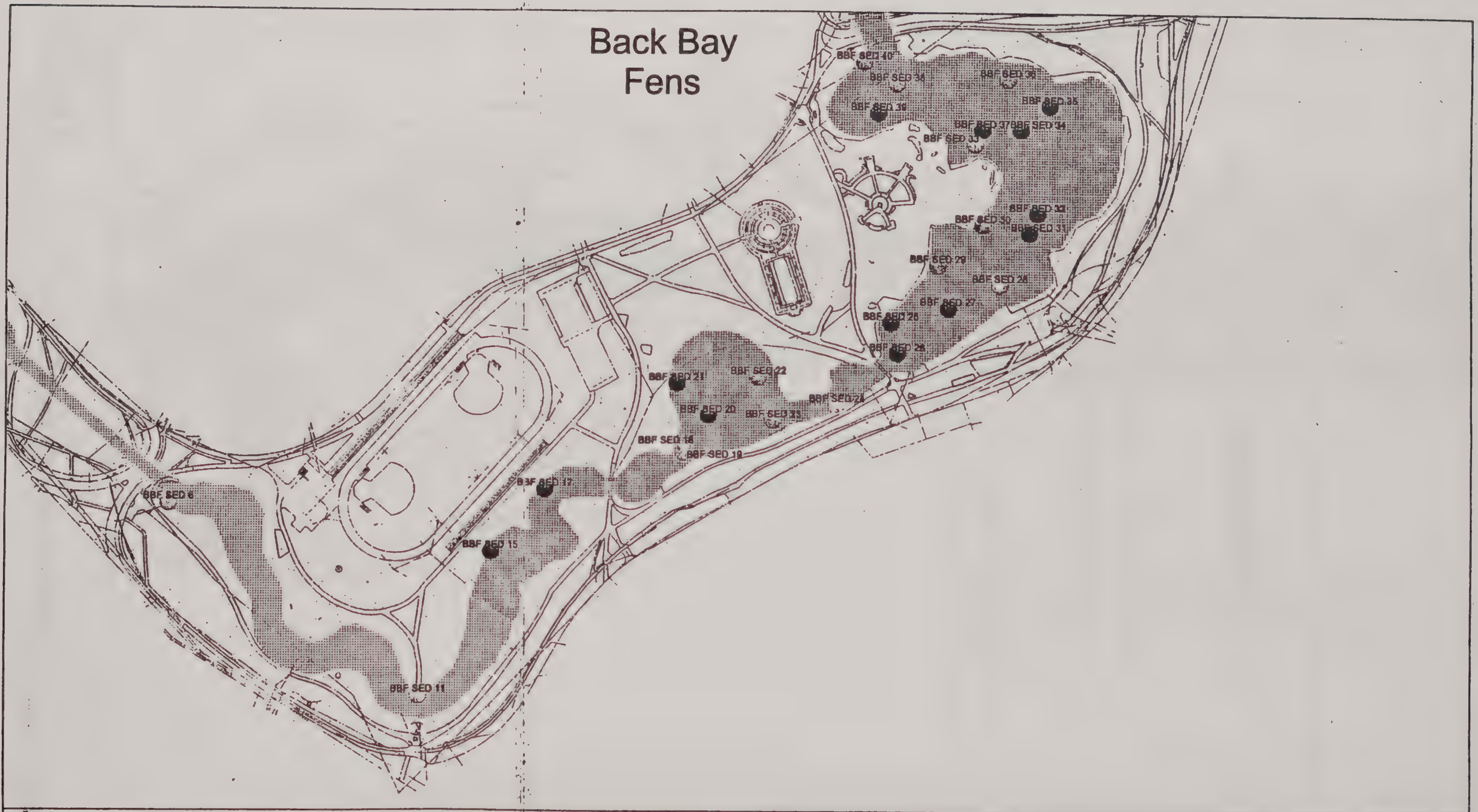


Figure 2
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CDM Camp Dresser & McKee Inc.

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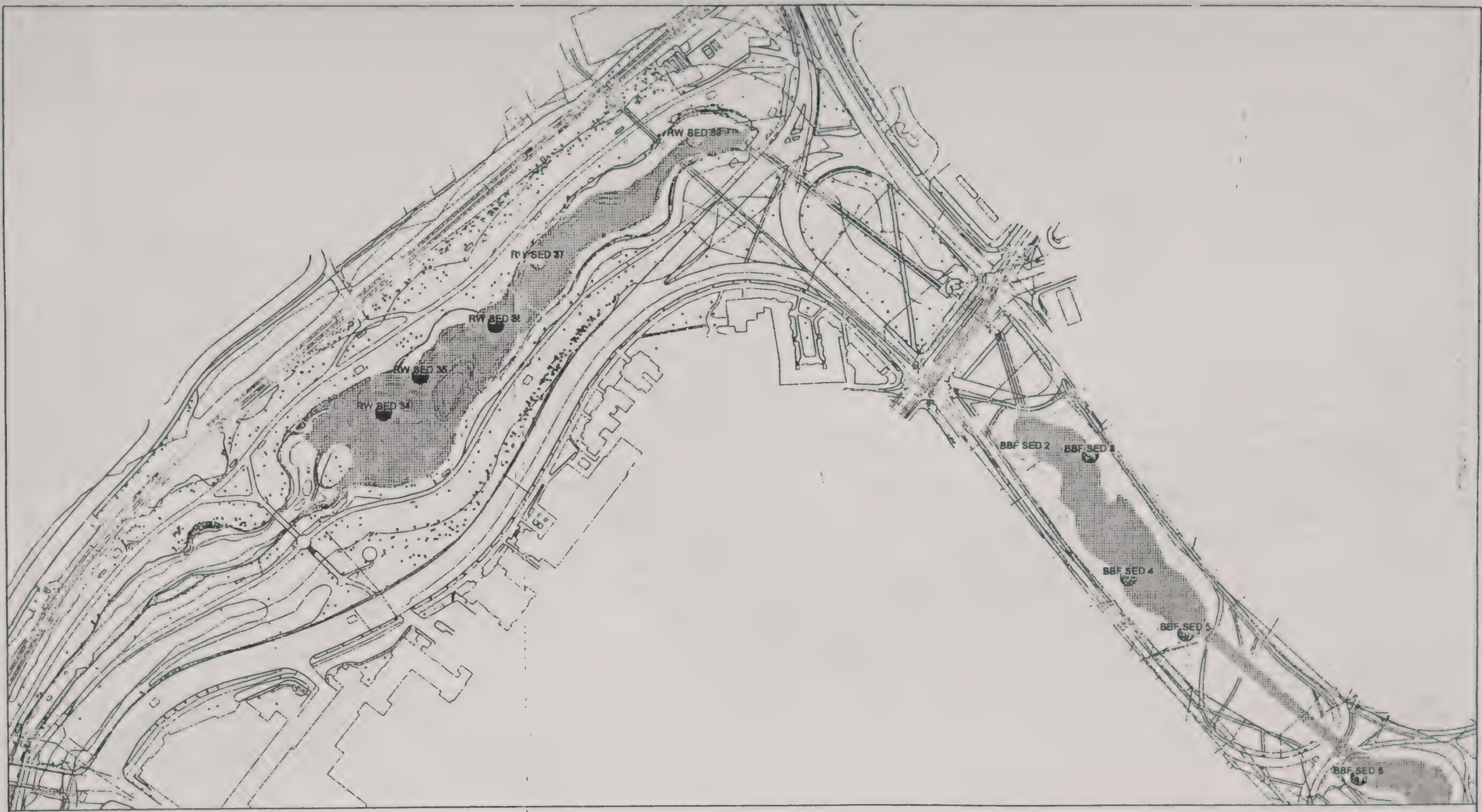

Figure 3
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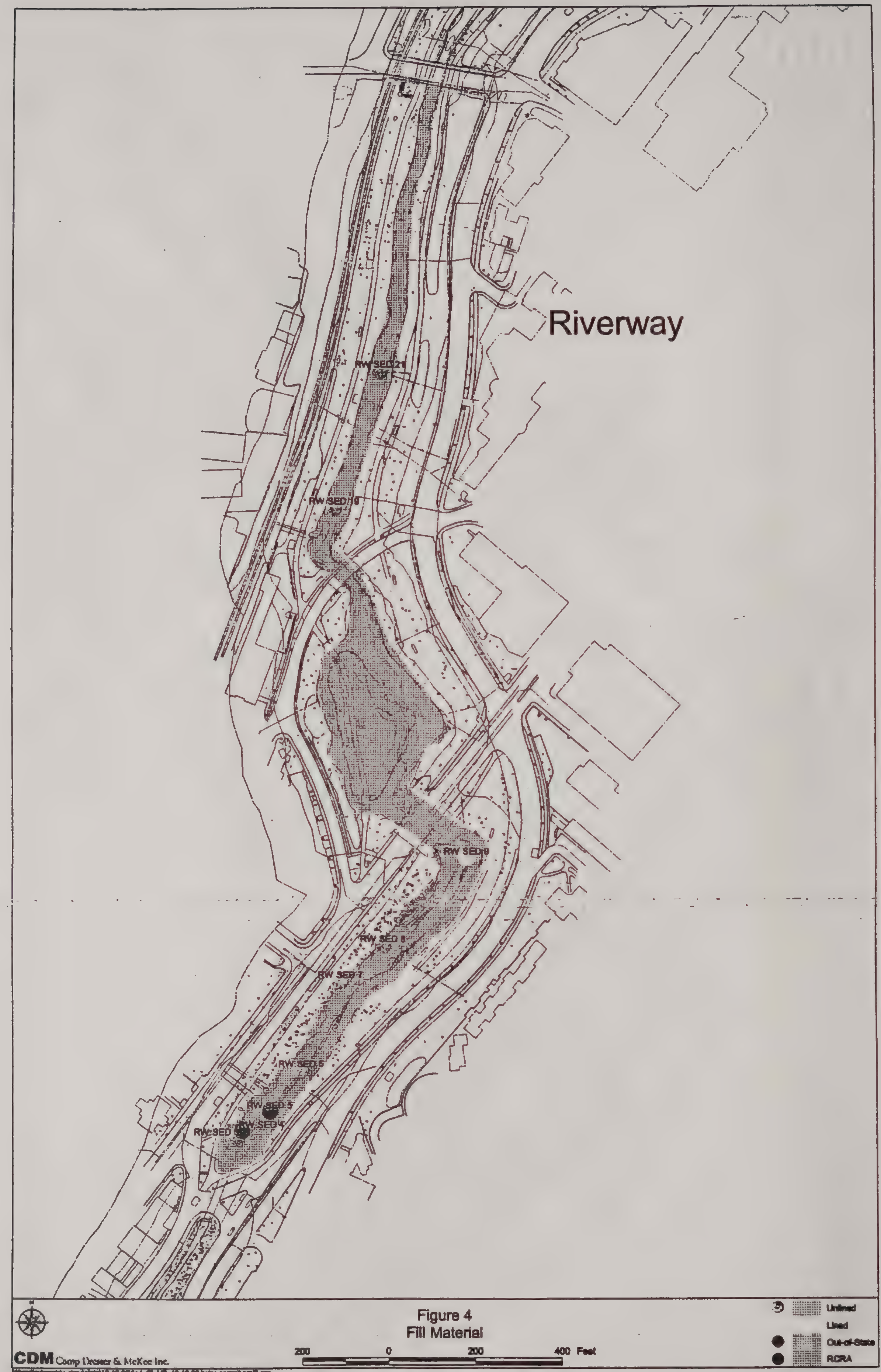

Figure 4
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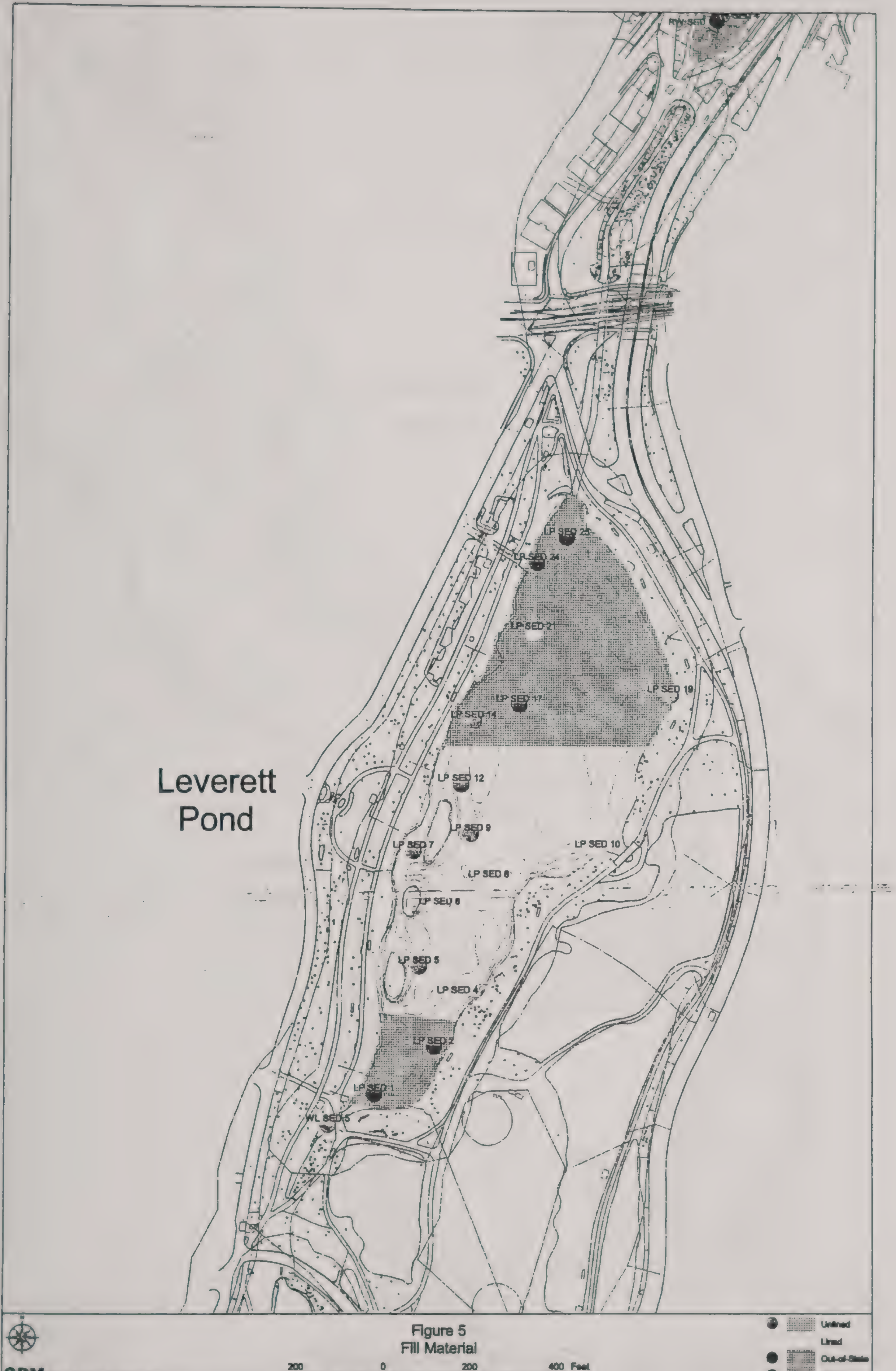

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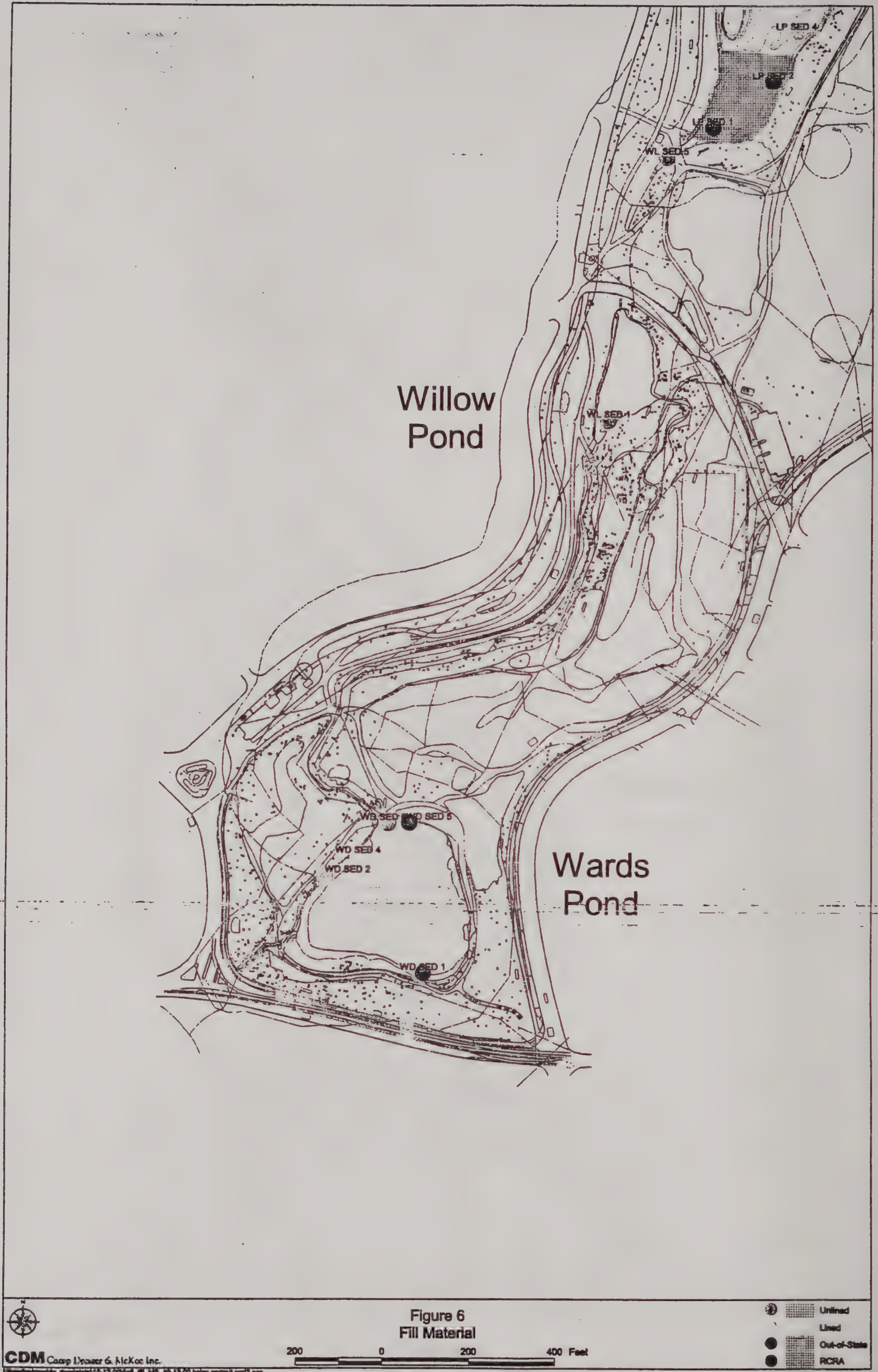

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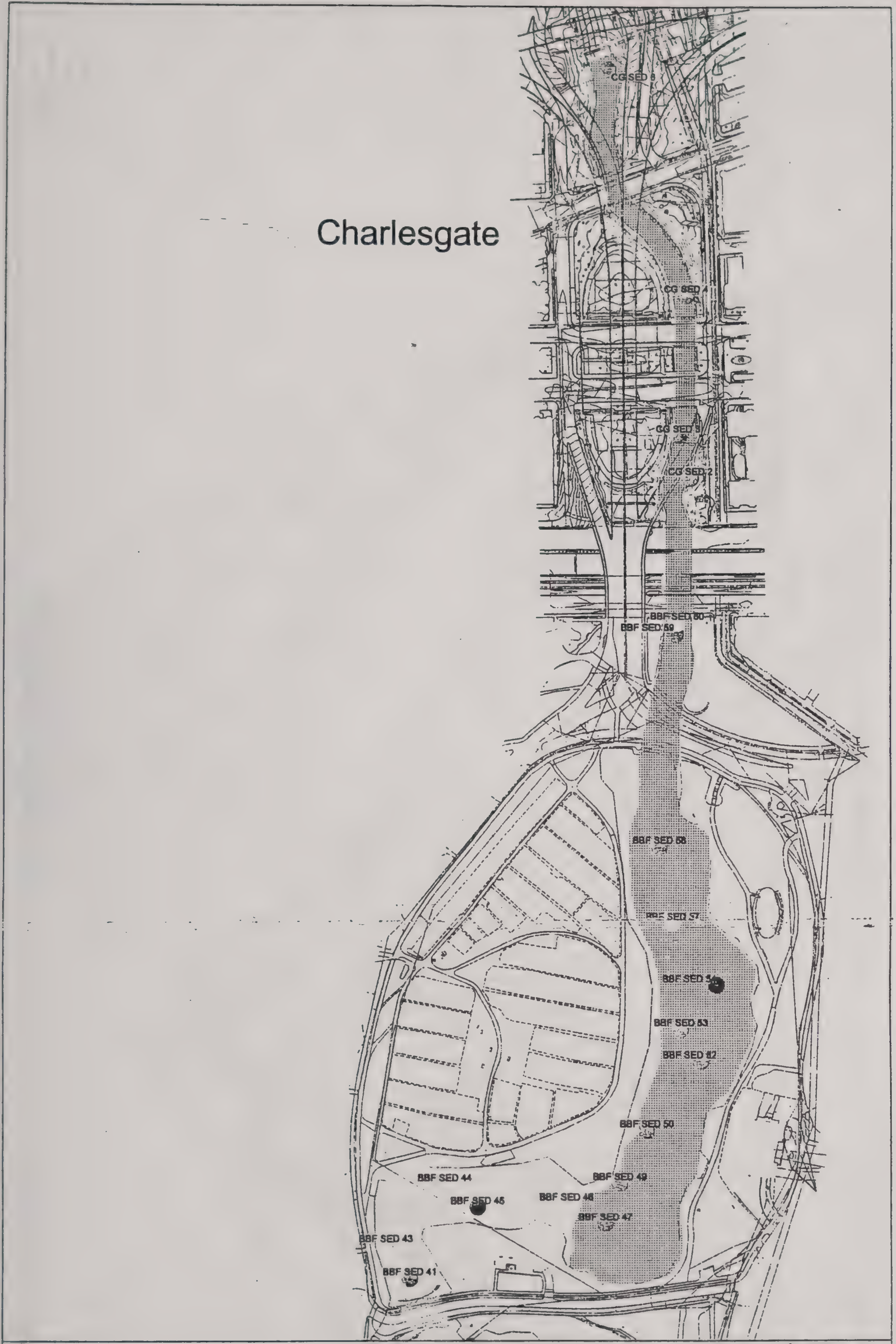

Figure 1
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CDM Camp Dresser & McKee Inc.

Back Bay Fens

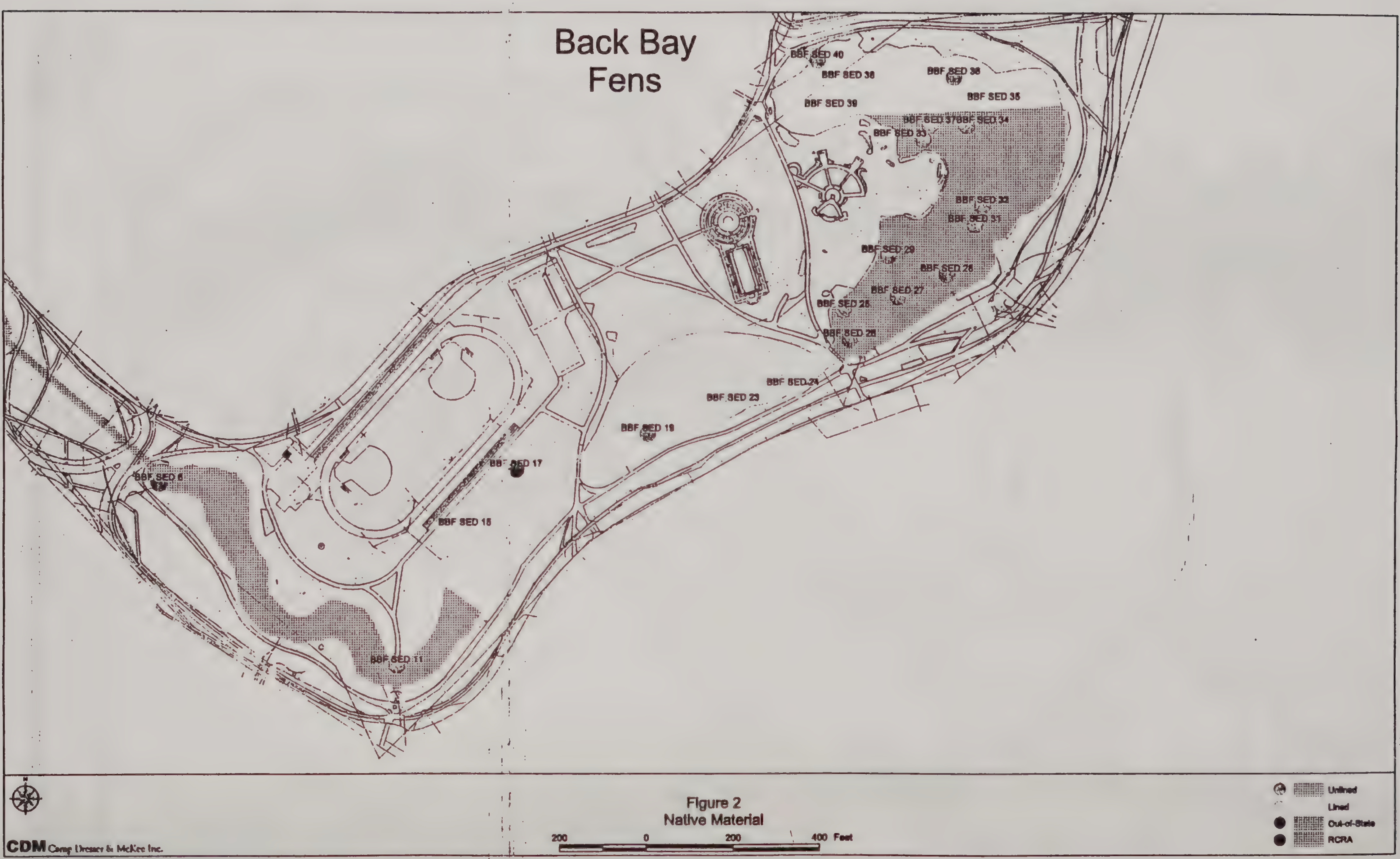

Figure 2
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CDM Camp Dresser & McKee Inc.

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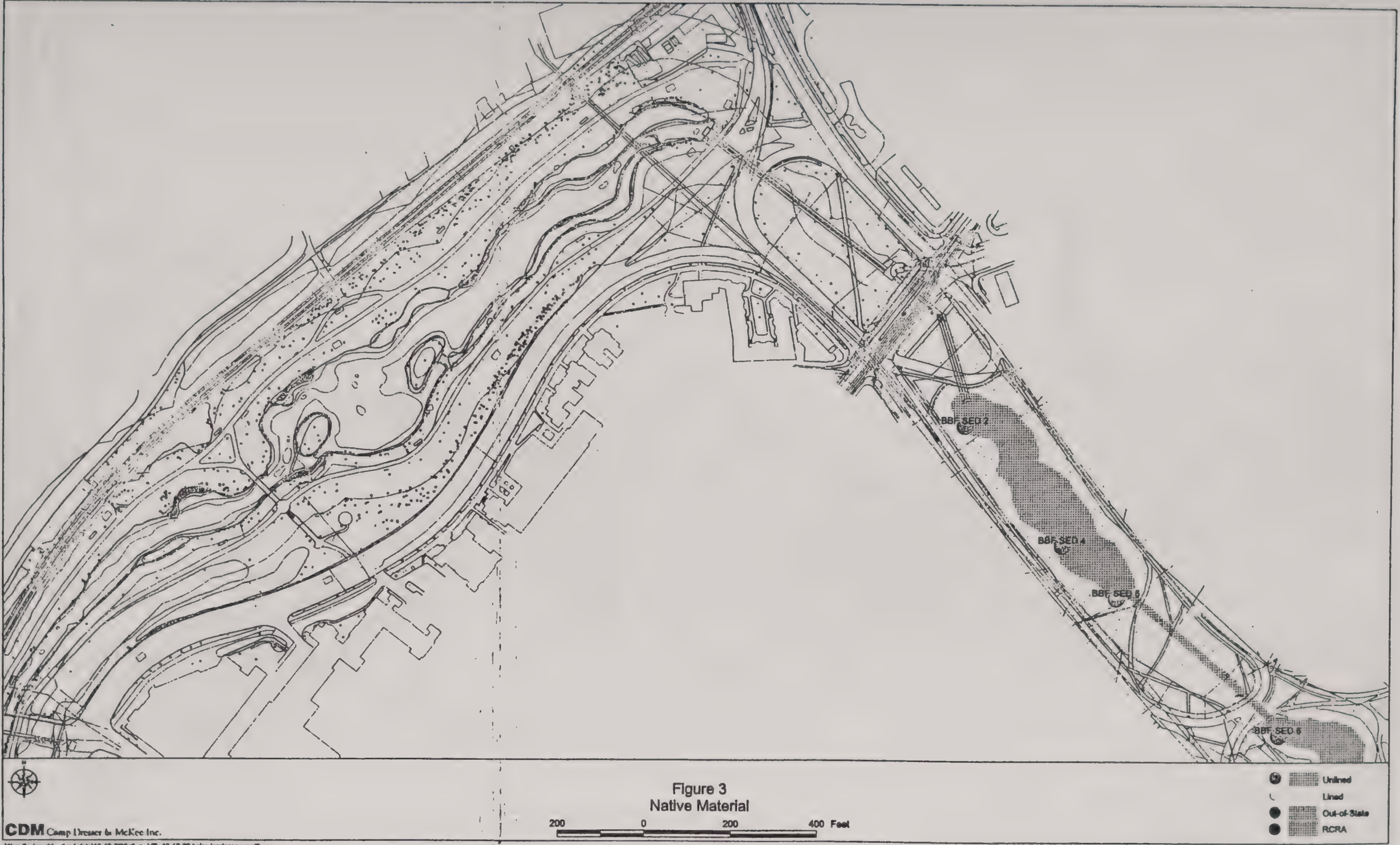

Figure 3
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CDM Camp Dresser & McKee Inc.

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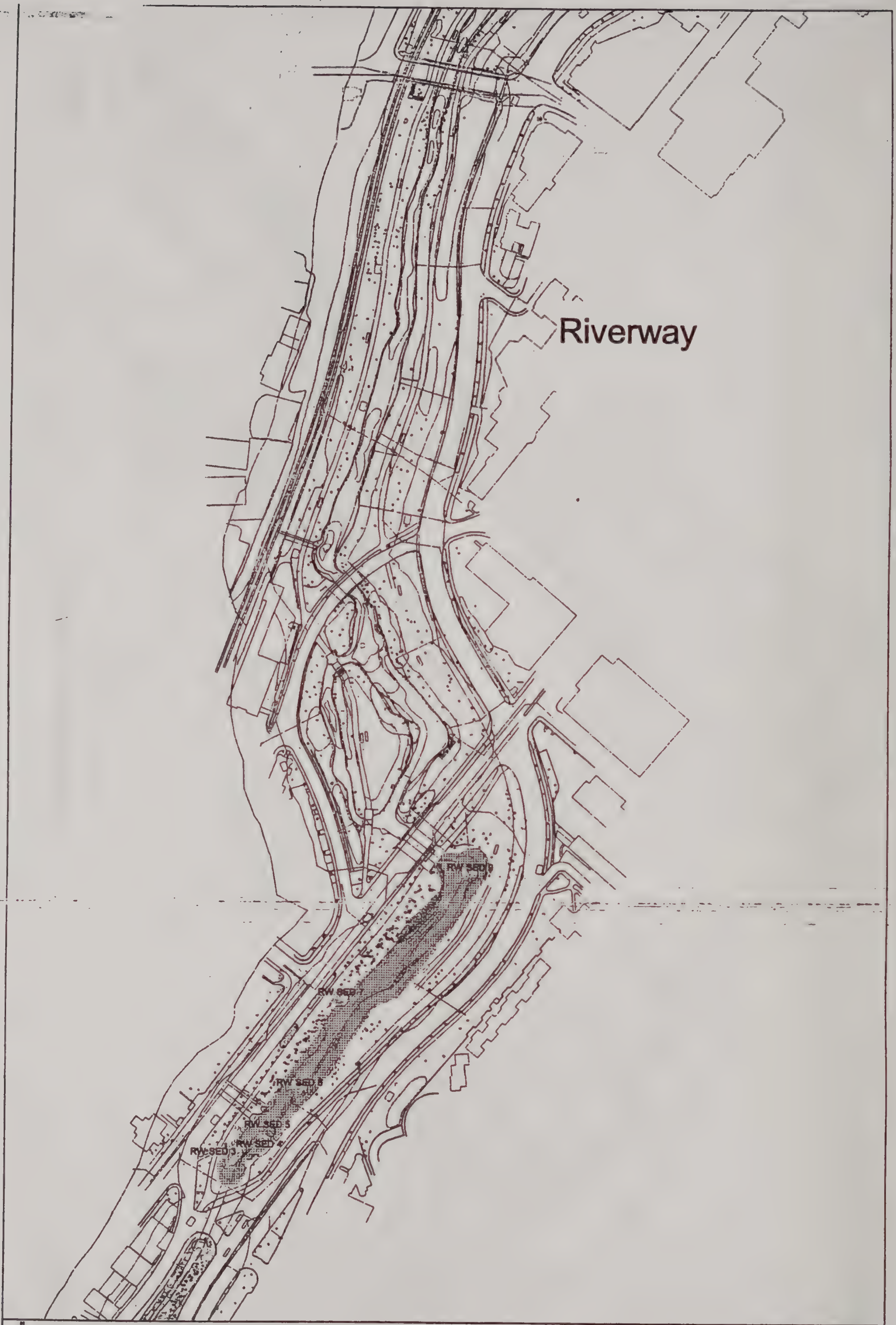

Figure 4
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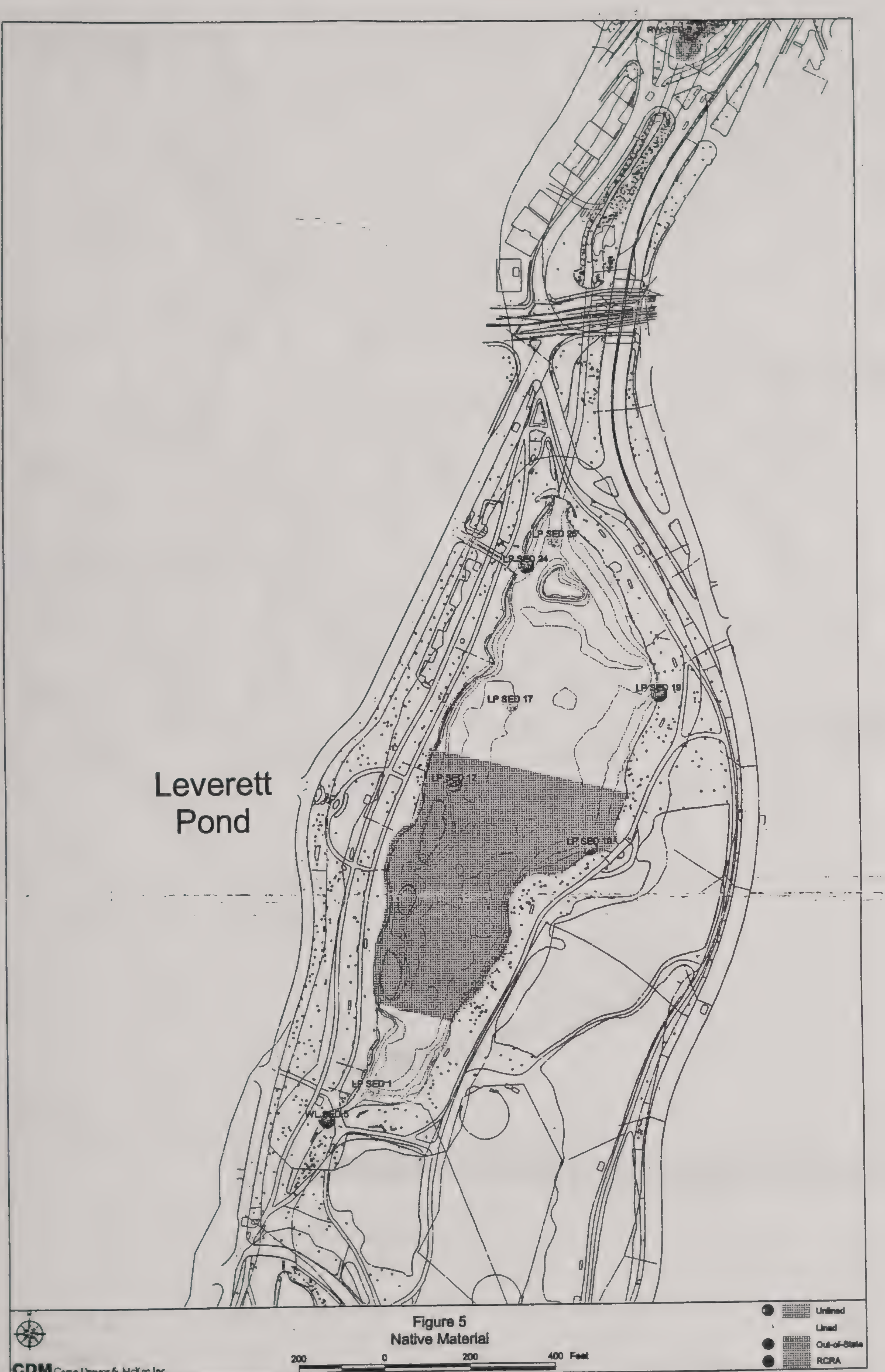

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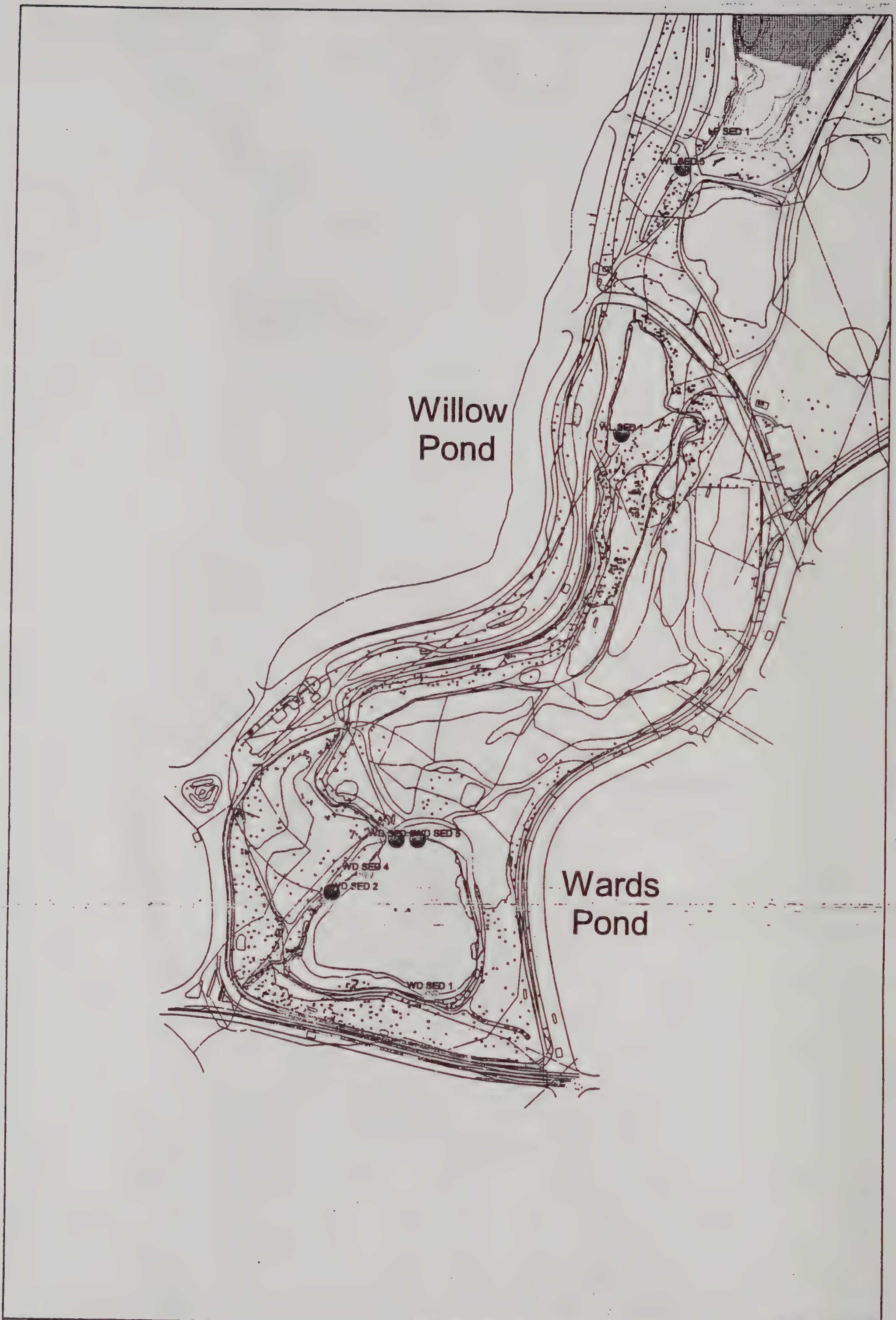

Figure 6
Native Material

CDM Camp Dresser & McKee Inc.

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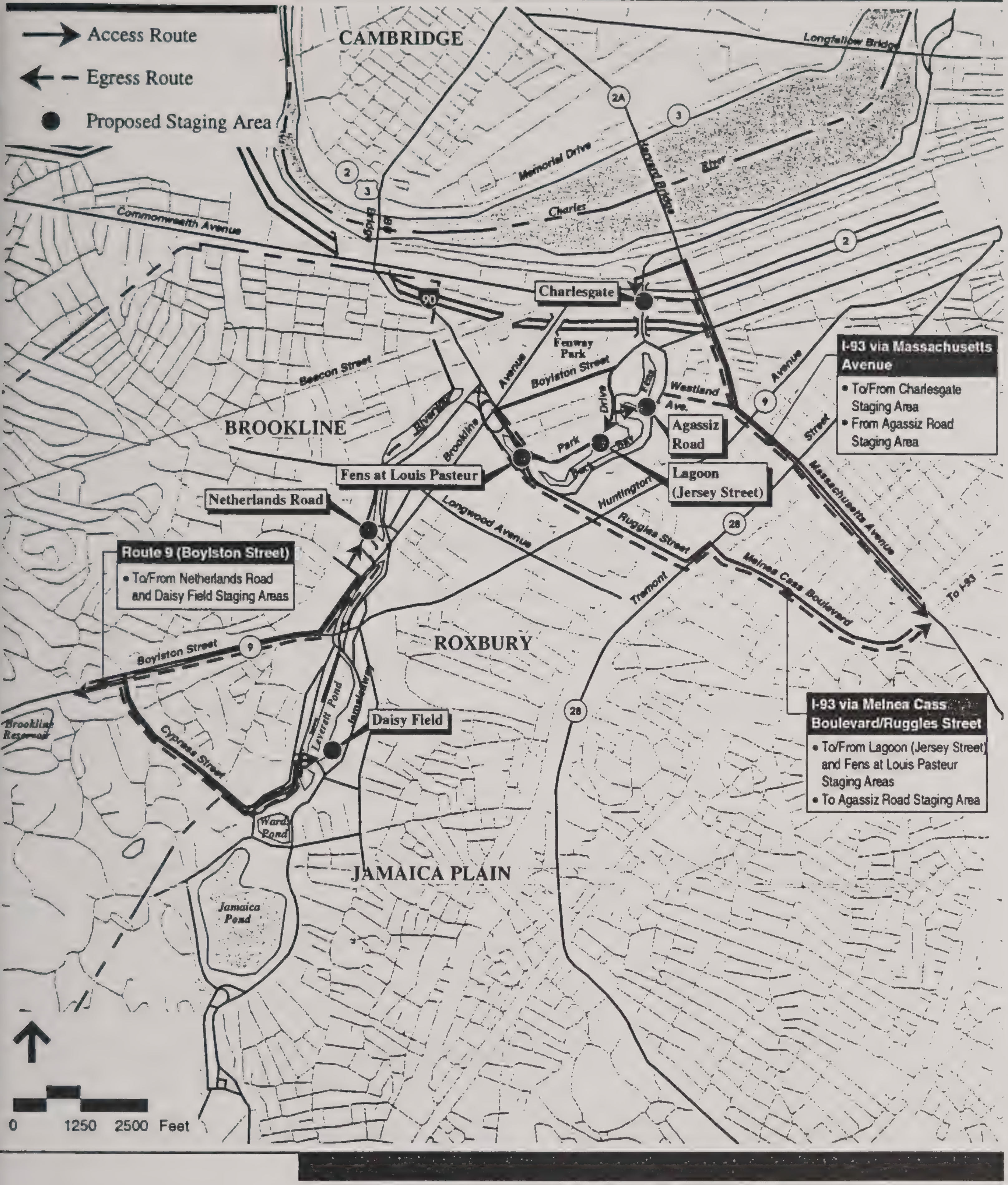
Attachment 5



Muddy River Restoration Project
Proposed Truck Haul Routes
(Hydraulic Method)

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – September 28, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager

Fran Beatty, ASLA, Boston Parks and Recreation Department

II Follow-up Items from CAC Meeting, September 19, 2000

a. Brookline Avenue Bridge Suggestions

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

b. Culverts: Overview of Approach to Historic Landscape Treatment

Marion Pressley, F.A.S.L.A., President
Pressley Associates, Inc.

III Presentation: Sediment Characterization/Dredge/Disposal/Invasive Removal

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

Joseph Wanat, P.E., Transportation Engineer
Vanasse Hangen Brustlin, Inc.

James H. Winkler, P.E., Manager of Design
Camp Dresser & McKee Inc.

Q&A/Discussion with CAC

IV Questions and Answers (General Public) Wrap Up

Summary

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian opened the meeting and welcomed CAC members.

John Burckardt presented two project-related updates. Mr. Burckardt explained that the Boston and Brookline Conservation Commission hearings on the wetlands delineations were held. Mr. Burckardt stated that both Conservation Commissions concurred with the wetlands delineations that were submitted by CDM on behalf of the project.

Mr. Burckardt informed the CAC that George Proakis, CAC member, sent him an email emphasizing the importance of better coordination and linkage between the Muddy River improvements and the proposed new Fenway ballpark. Mr. Burckardt stated that he will distribute Mr. Proakis' email to the CAC.

Mr. Burckardt asked if the CAC would be interested in taking a field tour of the project area from Wards Pond to Charlesgate. The CAC informally expressed support for a tour to be scheduled on a morning weekday in the middle of October. Mr. Burckardt said that the tour will be scheduled and the CAC will receive advance notice and invitation to attend.

Fran Beatty, Senior Landscape Architect, Boston Parks and Recreation Department and the Department's Project Director for the Muddy River Restoration Project, asked the CAC for their input and consideration to sponsor public meetings in November and in February. The purpose of the public meetings in November would be to provide the public with an update on the project. . The purpose of the February meetings would be to summarize the major findings in the DEIR and provide opportunities for public comment.

Ms. Beatty explained that the intent of the CAC "sponsoring" the public meetings is to affirm the process that has taken place between the project proponents and the CAC.

There was discussion among CAC members regarding Ms. Beatty's request. In response to some CAC member concerns, Ms. Beatty emphasized that the planning, coordination and execution of the public meetings would be the responsibility of the project team and that the CAC would not be asked to perform extra duties beyond attending the public meetings if they desired.

The CAC concluded that the public meetings, as described above, will be helpful for the general public and the CAC agreed that it would "sponsor" and lend its name to the meetings. The CAC agreed that the November meeting would include:

- an overview of the work done to date on the project;
- an explanation of the environmental review process governing the project, and where and how the public will be able to comment on the DEIR, and
- an opportunity for public comment.

The CAC agreed that the February meeting would for the purpose of public comment on the Draft EIR.

II Follow-up Items from CAC Meeting, September 19, 2000

a. Brookline Avenue Bridge Suggestions

Bruce Conklin briefly discussed the feasibility of a bridge alternative at Brookline Avenue (adjacent to the former Sears parking lot) that could be implemented in lieu of the culvert alternatives that were presented at the September 19, 2000 meeting. At that meeting, a CAC member suggested that a bridge alternative be added to the list of culvert alternatives.

Mr. Conklin explained that a bridge would raise the road surface at Brookline Avenue approximately four feet. He noted that this would reduce the sight distance for motorists in the block between the traffic signals at Park Drive and The Fenway. The bridge would also cost more than any of the culvert alternatives. The cost and traffic issues associated with construction of a bridge would make a bridge alternative almost infeasible. Mr. Conklin recommended that the bridge option be dropped.

Mr. Conklin then asked for CAC input and direction as to whether this alternative should be evaluated further.

Some CAC members acknowledged that a bridge alternative at Brookline Avenue might be desirable. However, the choice of a culvert or bridge options should follow from a consideration of the larger transportation issues associated with the roadways along the Muddy River.

It was noted that a committee of the Fenway Transportation Task Force will be studying neighborhood traffic issues, particularly at Brookline Avenue and the "Sears rotary." Fran Beatty noted that the City is coordinating the study of the traffic issues in this area through the Boston Transportation Department and the Boston Redevelopment Authority.

Other CAC members asked about the relationship of the 1990 Emerald Necklace Master Plan in the context of the Muddy River Restoration Project. They also asked about the CAC's role regarding the broader traffic and other issues affecting the Fenway. Some CAC members noted that now is the time to look at the "big picture" and there is an opportunity to correct the past encroachment of roadways upon the park in the area of Brookline Avenue and the former Sears lot.

After further discussion, the CAC felt that these issues are important but there are also other civic entities evaluating the transportation issues and the CAC should remain focused on the Muddy River Restoration Project.

Fran Beatty added that the project team will investigate ways to link the CAC to the other transportation planning efforts being conducted in the Fenway area.

b. Culverts: Overview of Approach to Historic Landscape Treatment

Marion Pressley presented an overview and approach to the historic landscape treatment. Ms. Pressley also distributed a draft statement that defined the approach. Definitions for restoration and rehabilitation, and the context of landscape architecture, were also provided. The draft CAC statement and treatment definitions are included as Attachment 2.

Ms. Pressley presented figures and historic photographs to illustrate the approach to landscape treatment. These photographs illustrated such locations as the now-demolished triple-arch bridge (in what is now Sears park) and the original Olmsted-era culvert and headwall at Brookline Avenue. After a review of this material, Ms. Pressley suggested that Rehabilitation should be the treatment approach at the for the daylighting in the former Sears parking lot, while Restoration should be the treatment approach at the Fens Bridge.

Ms. Pressley invited comments and input from the CAC. The CAC agreed with Ms. Pressley's approach and recommendations for proceeding forward with the historic treatment for the culvert and daylighting alternatives.

III Presentation: Sediment Characterization/Dredge/Disposal/Invasive Removal

Mr. Conklin explained the objectives of the presentation and referenced the handouts that are included as Attachment 3. Mr. Conklin's presentation focused on a review of the sediment sampling results (see maps included in Attachment 4), a summary of sediment disposal options, , and a discussion of sediment handling issues. Joseph Wanat presented the proposed truck routes (see map as Attachment 5) from the staging areas to the major thoroughfares, i.e. I-93, I-90 (MassPike) or Route 9. Jim Winkler presented a review of the *Phragmites* removal operation.

Q&A with CAC

Sediment Sampling and Disposal Options:

What is the difference between clean fill and the cleanest material that would get dredged from the River?

Mr. Conklin reviewed the sediment quality maps (Attachment 4) that delineate sediment quality in different reaches of the River. He explained that sediment quality would determine the landfill disposal options that are available for the material. He also added that the sediment quality will determine what handling procedures will be implemented at the staging areas and the engineering controls that will be implemented to control keep all of the dredged material contained to the staging areas during the handling process. Mr. Conklin added that there will be air quality monitoring at the staging areas and stringent requirements to insure the engineering controls are implemented.

How will trash and large debris that is removed from the River during the dredging process be handled?

Mr. Conklin responded that trash and large debris will be segregated and properly disposed by the contractor.

Will sediment quality affect the time required to process and handle the material in preparation for disposal?

Mr. Conklin stated that sediment quality would not affect material processing time provided that no additional sampling of the sediment is required. If sampling of the material were required while it is at the staging area, the material would have to remain contained on site until the sampling results are completed and the disposal option determined.

Was the project team surprised by the sediment sampling results?

Mr. Conklin responded that the project team was not surprised about the quality of the sediment, as determined by the recent sediment-sampling program. Mr. Conklin added that the results of the sampling program are consistent with previous sediment sampling that has been conducted in the Muddy River. Based on the sediment-sampling program, Mr. Conklin estimated the following:

8% of the material will require disposal at hazardous waste landfill
34% of the material will require disposal at a lined out-of-state landfill
15% of the material can be disposed in a lined in-state landfill
42% of the material can be disposed in an unlined in-state landfill

Why is the most contaminated material localized in the Fens?

Mr. Conklin stated that there could be a number of reasons why this is the case. He added that the Stony Brook Conduit overflow outlet to the Muddy River is located immediately upstream of the Fens. He also added that in the Fens the river widens and material might settle out to the river bottom at this location. Mr. Conklin lastly added that the Fens is the area that was last dredged many years ago.

Haul Routes for Sediment Disposal:

At this point of the meeting, Joe Wanat presented a summary of the proposed truck routes from the staging areas. Pages 4 and 5 of Attachment #3 include an outline of the evaluation of alternative haul routes from each staging area.

How were the truck haul routes evaluated and selected?

Mr. Wanat responded that there are a number of factors that are considered in the evaluation of truck haul routes. He stated that the goal is to get truck traffic to a major highway in the most safe and efficient manner. In determining potential routes for getting trucks from the staging areas to one of the major highways, Mr. Wanat added that existing level of service on the roadways, the number of pedestrian crossings, proximity to sensitive receptors, and the like are among the factors considered. Mr. Conklin added that the truck traffic issue is still being evaluated and the project team is working closely with the Boston Transportation Department (BTD), the Town of Brookline, and the Metropolitan District Commission (MDC), which is responsible for the maintenance of Park Drive, the Riverway and the Jamaicaway.

A CAC member expressed frustration with the graphics the project team used during the presentation.

Mr. Conklin stated that the project team will have copies of the maps presented distributed to the CAC. *Please refer to Attachments 4 and 5.*

How many days would a staging area be in operation and how long would truck traffic from a staging area continue.

Mr. Conklin responded that he did not have the data at this meeting but the project team presented this information at the August 22, 2000 CAC meeting.

Phragmites Removal:

At this point of the meeting, Jim Winkler presented a detailed summary of the *Phragmites* removal process that will likely be implemented on the project. Mr. Winkler explained that the *Phragmites* will be removed during the dredging. Mr. Winkler discussed a four-step process that includes:

1) harvesting the *Phragmites* stock;
2) dredging the center of the channel or river;
3) removing the *Phragmites* root mass; and
4) dredging along the shoreline.

Mr. Winkler emphasized that the dredging and *Phragmites* removal operation will be conducted from one side of the River. Access into the River from both sides, in any single location, will not occur.

Where will the Phragmites *stocks be disposed?*

Mr. Winkler responded that the *Phragmites* stocks could be composted. The contractor will determine the appropriate, legal disposal option for the *Phragmites*. Mr. Winkler added that the *Phragmites* root mass will be treated similar to the sediment.

How will you remove Phragmites *without having the seeds from the stocks fall into the River?*

Mr. Conklin stated that the contractor will be use containment booms and harvest the stocks at the time of the year when the seeds are not producing. Mr. Conklin further added that the construction sequencing issue is critically important and as the design of the project progresses, the construction sequencing and timing issues will be closely evaluated.

A CAC member commented that the Nature Conservancy developed a process where the Phragmites *stalks are cut and bagged on-site and the root mass is treated with herbicides.*

Mr. Conklin stated that the project team will look into this method. He also added a post-dredge monitoring will be performed in order to avoid the spread or re-growth of the *Phragmites*. The maintenance and monitoring plan for the project will also focus on post-dredge monitoring to help prevent re-growth of *Phragmites*.

Will Phragmites *removal at the River's edge be the time that modifications of the shoreline are implemented in those applicable areas?*

Mr. Conklin responded yes.

A CAC member commented on the importance of only disturbing the bank once and that replanting takes place immediately to prevent re-growth of Phragmites *or other invasive species. Also, what temporary erosion controls will be implemented during construction?*

Mr. Conklin responded that the replanting will take place immediately. If bank disturbance takes place in the winter, controls would be put in place to prevent re-growth of invasive species and the new plantings would be done in the spring. Mr. Conklin added that the Boston and Brookline Conservation Commissions will have to review and approve the erosion controls used on the banks.

How will the project team insure that the contractor will recognize invasive re-growth and do an excellent job with the re-plantings?

Mr. Conklin added that the contract specifications will be stringent and for the re-plantings Pressley Associates will develop them. He also added that the project team will be supervising the work of the contractor on a full-time basis to ensure the contractor follows and meets the contract specifications.

Will the Phragmites *removal method be applicable to knotweed removal?*

Mr. Winkler responded it would be similar.

Proposed CAC Statements on Truck Routes and *Phragmites* Removal

Ms. Jeghelian reviewed the proposed statements on truck routes and *Phragmites* removal.

1. "Does the CAC agree with the consultant's recommended truck route selection?"

A CAC member commented that the CAC should not endorse any truck route until they have reviewed the full plans and all of the truck route alternatives considered. The CAC member added that a still unresolved issue is how long would trucks be parked in the park area or in the staging areas waiting to be loaded with dredged material.

Mr. Conklin stated that this is still an issue that will be addressed later in the design process.

A CAC member commented that the truck routes presented are reasonable and appear to be the most logical routes for the different staging areas.

After discussion, Ms. Jeghelian confirmed that the CAC wants to withhold its recommendation on truck routes for now.
The project team will provide the CAC with more detailed information on the haul routes evaluated, including copies of the maps that were presented. *For discussion of the alternative haul routes considered from each staging, please refer to pages 4 and 5 of Attachment#3. For a map of the haul routes, please refer to Attachment #5.*

2. "Does the CAC agree with the consultant's methodology for removing *Phragmites*?

A CAC member commented that the Phragmites *removal method is sound but the project team should more closely examine the seed issue and perhaps consult with a botanist. The timing of when the stocks are removed from the river is critical to ensure seeds are not left in the river.*

Mr. Conklin agreed and said that there would be more detailed information about the process in the environmental review documents.

V Questions and Answers (General Public) Wrap Up

What is the quantity of sediment expected to be removed from the River?

Mr. Conklin responded that the project team has not determined the quantity of material that needs to be dredged from the River.

A representative from MASCO commented that they have studied the traffic issues at the Sears rotary for a long time and are happy to share their data with the project team.

Is there anyway to keep Netherlands Road open for service while it is being used as a staging area?

Mr. Conklin responded no. He also added that the project team discussed this with the Brookline Department of Public Works. The traffic analysis of closing Netherlands Road will be included in the EIR.

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for Monday, October 23, 2000. The meeting will be held in the Egan Engineering/Science Research Center in the Raytheon Amphitheater, Room 240. The topic will be Alternatives Analyses.

Enclosures:
- Attachment 1 – Sign-In Sheet
- Attachment 2 – Draft CAC Statement on Historic Treatments for Culverts and Daylighting
- Attachment 3 – CDM Consultant Team Presentation
- Attachment 4 – Sediment Characterization Maps
- Attachment 5 – Haul Routes

Emerald Necklace Citizens Advisory Committee

Meeting

Sign-In Sheet

September 28, 2000

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	Isabella B. Callanan
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	Edward Cutler
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	Frances Allou Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Emerald Necklace Citizens Advisory Committee

Meeting

September 28, 2000

Sign-In Sh

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
John A.	Martin	Emerald Necklace Conservancy	
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	
Mary Crain	Penniman	Charles River Watershed Association	Mary Crain Pennima
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

Emerald Necklace Citizens Advisory Committee

Meeting

September 28, 2000

Sign-In Sheet

\\parksmail\bospark\Muddy\CAC Meetings\CAC-10 Sep 28, 2000\[CAC-10 Sign-in (Sept 28 2000).xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
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Bob McDonnell	NY	373-5330	
John Furlong	Brookline	730-2140	furlong@ Radcliffe.Edu
MARTA RIVERA	OFFICE OF CITY COUNCILOR ROSS BOSTON CITY HALL / DISTRICT 8	635-4225	MARTA.RIVERA@ CI.BOSTON.MA.US
Jan Henderson	MASCO	432-2742	
Betsy Shore Gross	EOEA	626-1117	
Simone Auster	Emerald Necklace Conservancy	722-9823	
FRANK FARLOW	8 BOWKER ST, BRO	232-9654	marty_farlow@ brookline.mec.edu
Mark Swartz	Frederick Law Olmsted NHS 99 Warren St. Brookline	566-1689	
Anne Covert	14 Monmouth Ct	738-0107	
Joe Wanat	VHB, Inc.	617-924-1770	jwanat@vhb.com
Marion Pressley	PA, Inc.	617-491-5300	
CAROLE KASLICK	CDM	617-452-6323	kaslickca@cdm.com
John Burckardt	PB / Boston Parks	617-634-4505	
Carlton L Noyes	Cortell-Assoc	781 890 3737 x128	
Jim Winkler	CDM	617-452-6263	
MARK P. SMITH	EOEA	617 626-1050	
sara anning	Harvard GSD	617 776 9418	sanning@gsd. harvard.edu

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

September 28, 2000

\\parksmail\bospark\Muddy\CAC Meetings\CAC-10 Sep 28, 2000\[CAC-10 Sign-in (Sept 28 2000).xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
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JACK Malone	ENC		
Fran Beatty	BOS Parks		
Gini Crandell	Brookline		crandell@gsd.harvard.e
JAY CORTELL	CORTELL		cortell@cortell.com
Erin Chute	Brookline Conservation		erin-chute@town.brookli ma.us

Draft Statement – Historic Treatments for Culverts and "Daylighting"
September 28, 2000

The CAC agrees with the following approach to the historic treatment in the areas of new culverts and "daylighting:"

- At the Fens Bridge and the "daylighting" immediately upstream: **Restoration**
- At the section from the Riverway to the Fens Pond at Brookline Avenue (including the former Sears parking lot): **Rehabilitation.**

~ ~

Treatment Definitions:

Restoration: the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by removing features from other periods in its history and reconstructing missing features from the restoration period.

Rehabilitation: the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Source: Definitions are taken from *A Guide to Cultural Landscape Reports*, Department of the Interior, National Parks Service, p. 82 (included in CAC mailing dated July 10, 2000). The definitions of the four treatment types are also included in *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.*

MEMORANDUM

DATE: October 4, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Upcoming Meeting Schedule; Other Information

Schedule of Upcoming Meetings

No.	Day	Date	Time	Topic(s)	Location
11	Mon.	23-Oct-2000	6 PM	Alternatives Evaluation	Egan Center, NU
12	Mon.	30-Oct-2000	6 PM	Alternatives Evaluation, Part 2: BMP Alternatives Analysis	Egan Center, NU
---	Wed.	08-Nov-2000	6 PM	*Public Meeting*	Egan Center, NU
13	Wed.	15-Nov-2000	6 PM	Mitigation & Costs	Faculty Center, NU
14	Thur.	25-Jan-2001	6 PM	EIR/EA Presentation	Egan Center, NU

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Enclosures:

1. Meeting Summary, CAC Meeting of September 19, 2000
2. Meeting Summary, CAC Meeting of September 28, 2000.

   Please review the 2 meeting summaries. Submit written comments within 7 calendar days John Burckardt by fax(617-635-3256) or e-mail (jburckardt@ci.boston.ma.us) *The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.*

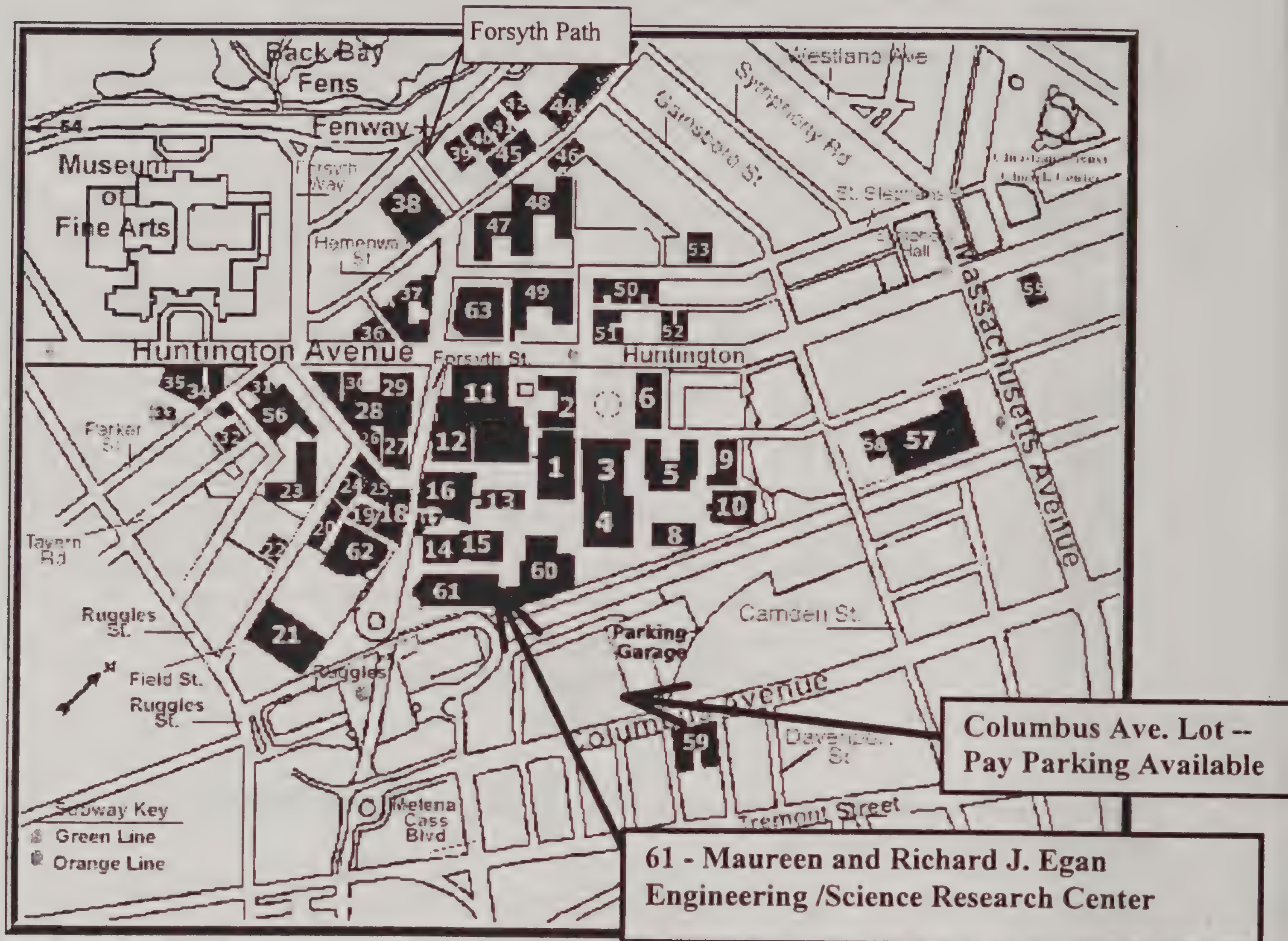
3. Glossary of Terms –*Definitions for September 28, 2000 CAC Meeting*
   Please place in Tab #5 of the CAC Workbook
4. Revised List of Abbreviations Please place in Tab #5 of the CAC Workbook

Directions to

Maureen and Richard J. Egan Engineering /Science Research Center

Raytheon Amphitheater -- Room 240

NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot -- Pay Parking Available

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee
Northeastern University, Egan Engineering /Science Research Center
Raytheon Amphitheater — Room 240

Monday, October 23, 2000
6:00p.m. - 8:30p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:30

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

***John Burckardt**, Project Manager*

II. **Follow-up: Regional Transportation Issues** 6:30 - 6:50

***Fran Beatty, A. L. S. A.**, Senior Landscape Architect for Historic Parks*
Boston Parks & Recreation Department

III. **Project Update** 6:50 – 6:55

***Bruce R. Conklin, P. E.**, Vice President*
Camp Dresser & McKee Inc.

IV. **Presentation: Alternatives Analysis** 6:55 – 7:40

***Bruce R. Conklin, P. E.**, Vice President*
Camp Dresser & McKee Inc.

Q&A/Discussion with CAC 7:40 – 8:20

V. **Questions and Answers (General Public) Wrap Up** 8:20 – 8:30

Camp Dresser & McKee Inc.

Muddy River Restoration Project

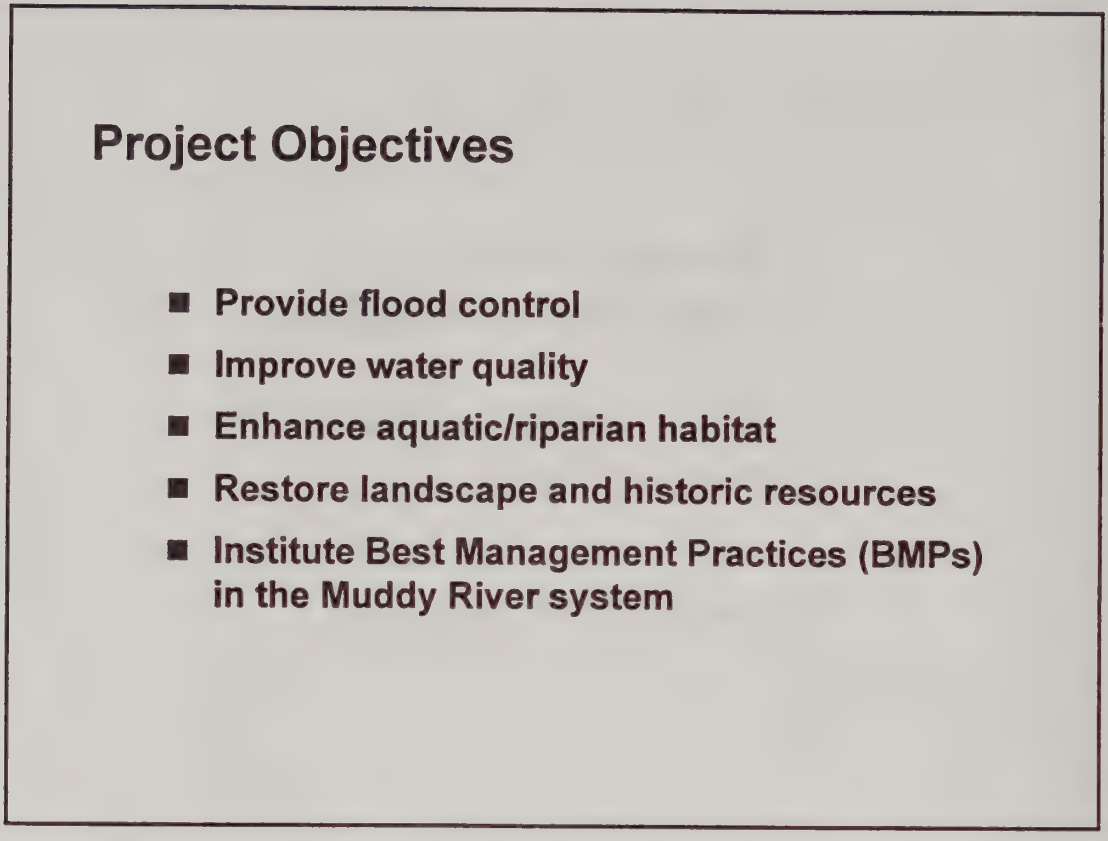
Alternatives Analysis

October 23, 2000

Bruce Conklin PE, CDM

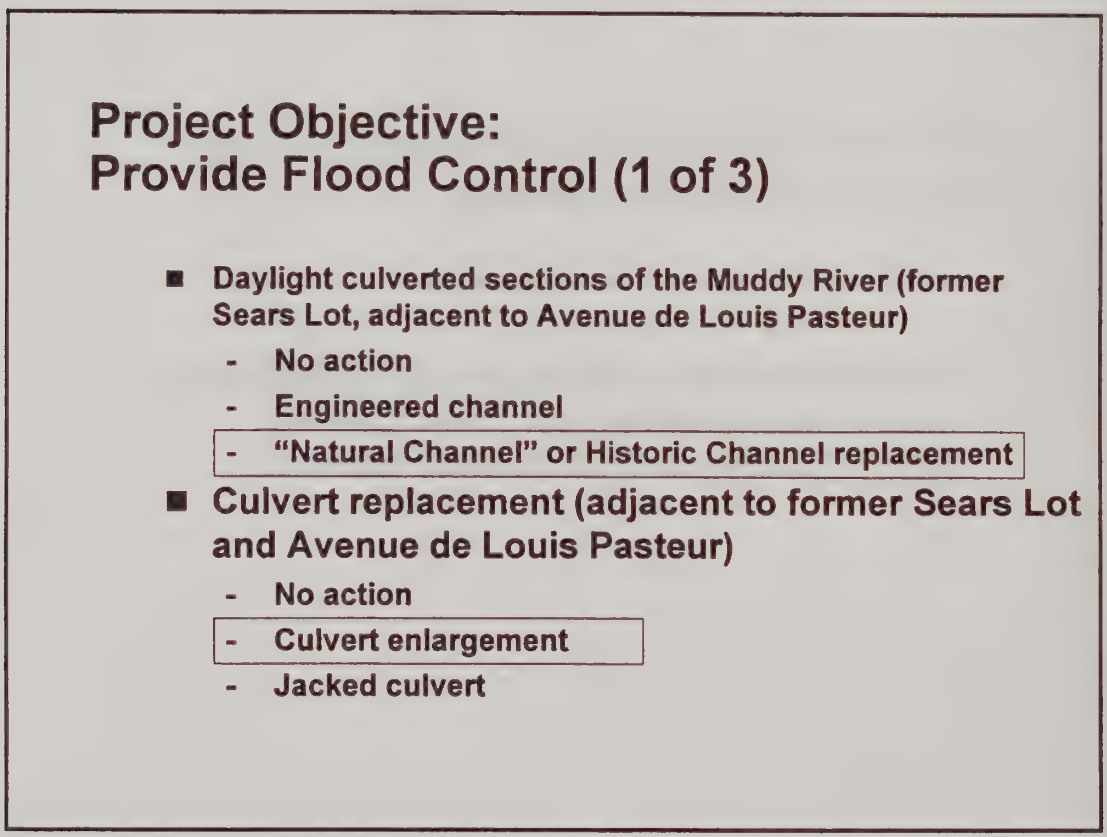
Emerald Necklace Citizens Advisory Committee Presentation

Emerald Necklace Environmental Master Plan and Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement



Project Objectives

- Provide flood control
- Improve water quality
- Enhance aquatic/riparian habitat
- Restore landscape and historic resources
- Institute Best Management Practices (BMPs) in the Muddy River system



Project Objective: Provide Flood Control (1 of 3)

- Daylight culverted sections of the Muddy River (former Sears Lot, adjacent to Avenue de Louis Pasteur)
  - No action
  - Engineered channel
  - “Natural Channel” or Historic Channel replacement
- Culvert replacement (adjacent to former Sears Lot and Avenue de Louis Pasteur)
  - No action
  - Culvert enlargement
  - Jacked culvert

Project Objective:
Provide Flood Control (2 of 3)

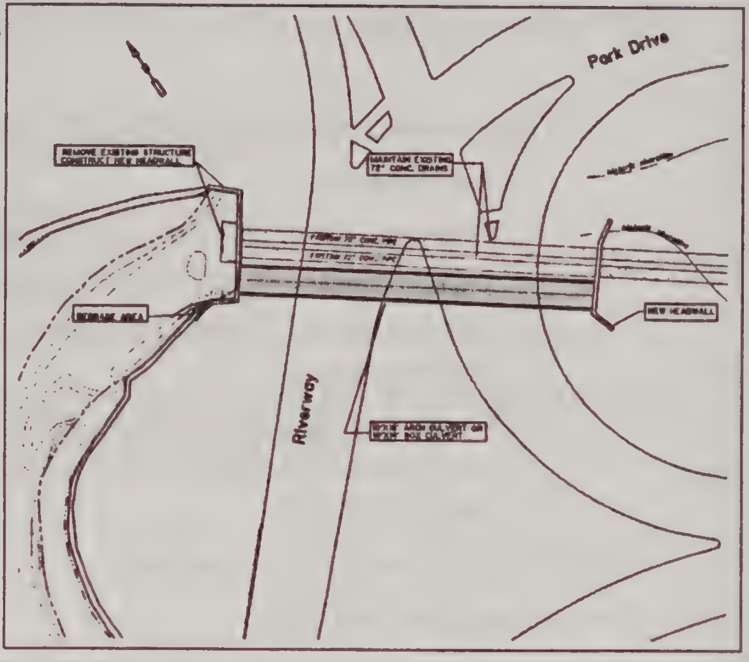
- Open channel areas of Muddy River
  - No Action
  - Dredge the Charlesgate Area only
  - Partially dredge a flood control channel in the Back Bay Fens and spot dredging in the Riverway
  - Fully dredge the Back Bay Fens, Riverway and other sections of the Muddy River to Ward's Pond
- Flood proofing of property
- Upstream storage

Project Objective:
Provide Flood Control (3 of 3)

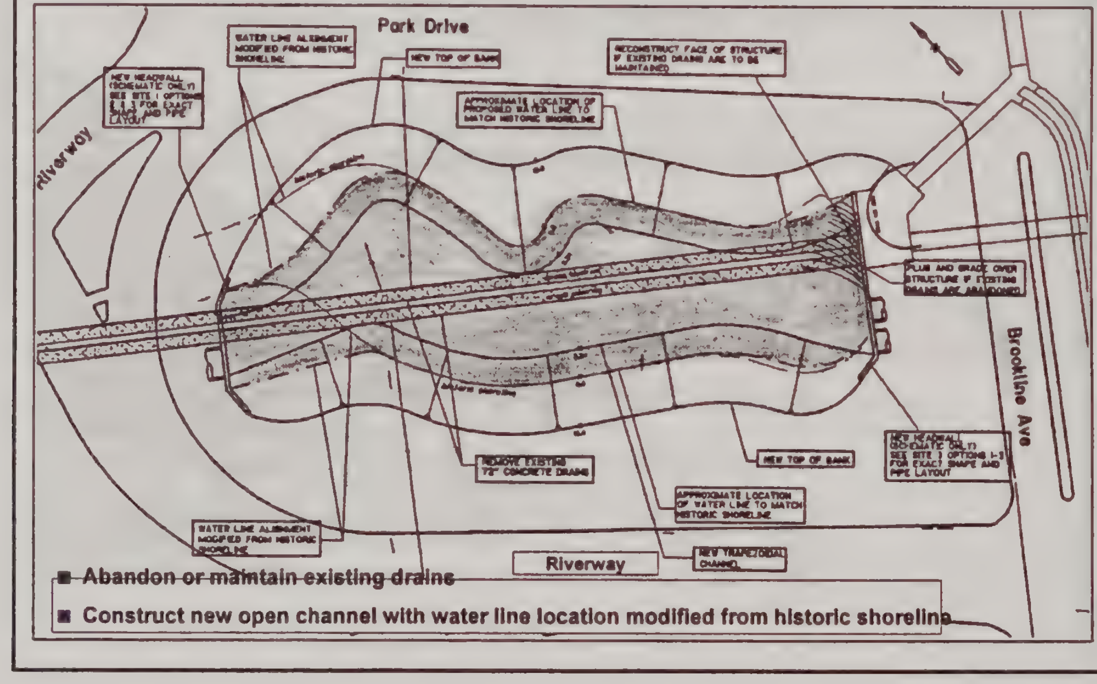
- Alternative types of dredging
  - Dredge in the dry
  - Drag line dredging
  - Environmental clamshell bucket dredging
  - Gradall dredging
  - Conventional hydraulic dredging
  - High solids hydraulic dredging (Toyo-type pump)

Riverway Culvert - Option No. 3

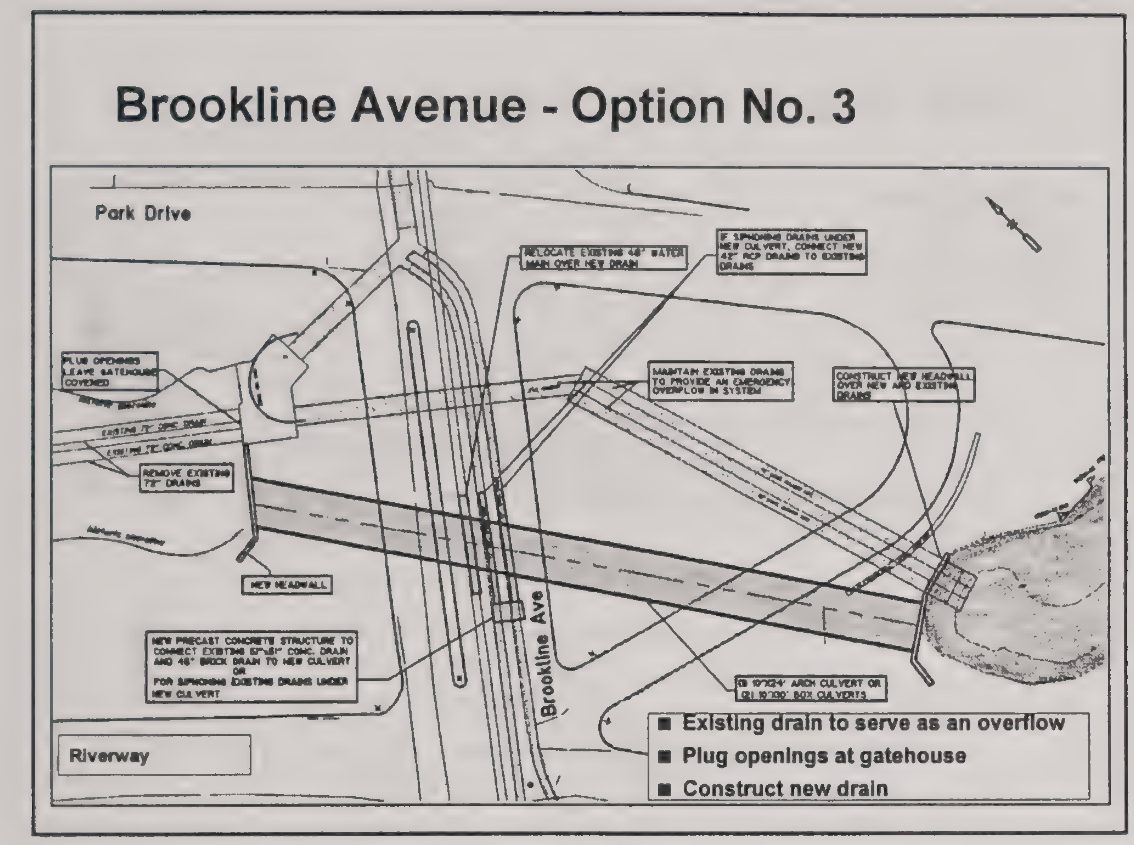
- Maintain existing drains
- Remove structure
- Construct new drain



Former Sears Lot - Option No. 3



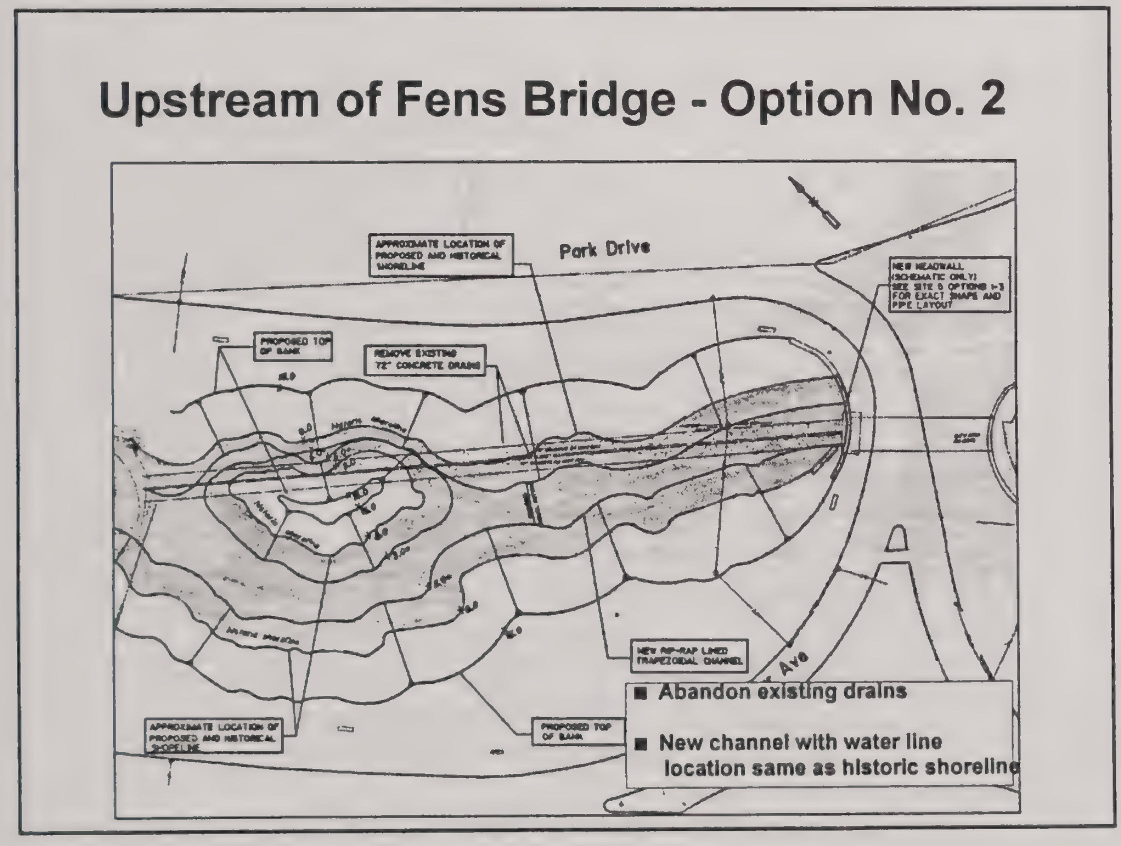
- Abandon or maintain existing drains
- Construct new open channel with water line location modified from historic shoreline



Brookline Avenue - Option No. 3

Park Drive
RELOCATE EXISTING 48" WATER MAIN OVER NEW DRAIN
IF SIPHONING DRAINS UNDER NEW CULVERT, CONNECT NEW 42" RCP DRAINS TO EXISTING DRAINS
PLUG OPENINGS LEAVE GATEHOUSE COVERED
MAINTAIN EXISTING DRAINS TO PROVIDE AN EMERGENCY OVERFLOW IN SYSTEM
CONSTRUCT NEW HEADWALL OVER NEW AND EXISTING DRAINS
EXISTING 72" CONC. DRAIN
EXISTING 72" CONC. DRAIN
REMOVE EXISTING 72" DRAINS
NEW HEADWALL
NEW PRECAST CONCRETE STRUCTURE TO CONNECT EXISTING 57"x81" CONC. DRAIN AND 46" BRICK DRAIN TO NEW CULVERT OR FOR SIPHONING EXISTING DRAINS UNDER NEW CULVERT
Brookline Ave
(1) 10'X24' ARCH CULVERT OR (2) 10'X10' BOX CULVERTS
Riverway

- Existing drain to serve as an overflow
- Plug openings at gatehouse
- Construct new drain



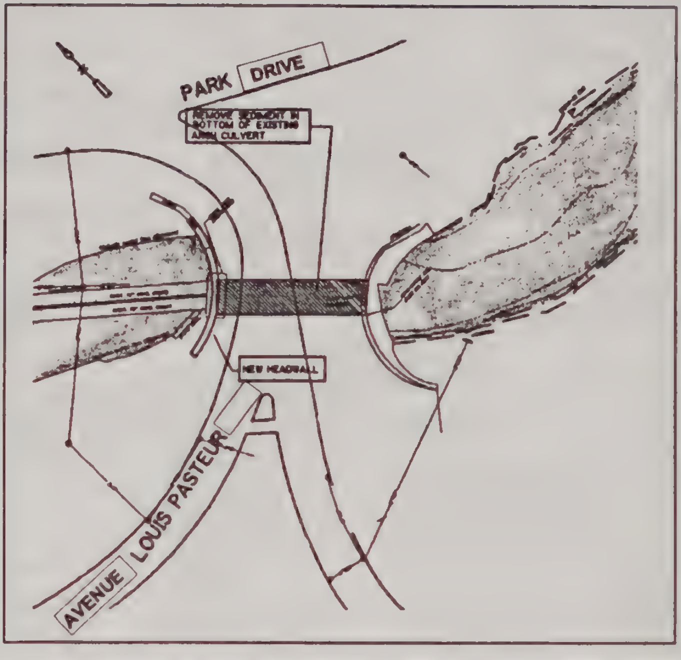
Upstream of Fens Bridge - Option No. 2

APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
Park Drive
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 6 OPTIONS 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
PROPOSED TOP OF BANK
REMOVE EXISTING 72" CONCRETE DRAINS
NEW RIP-RAP LINED TRAPEZOIDAL CHANNEL
APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
PROPOSED TOP OF BANK
Ave

- Abandon existing drains
- New channel with water line location same as historic shorelin

Fens Bridge - Option No. 1

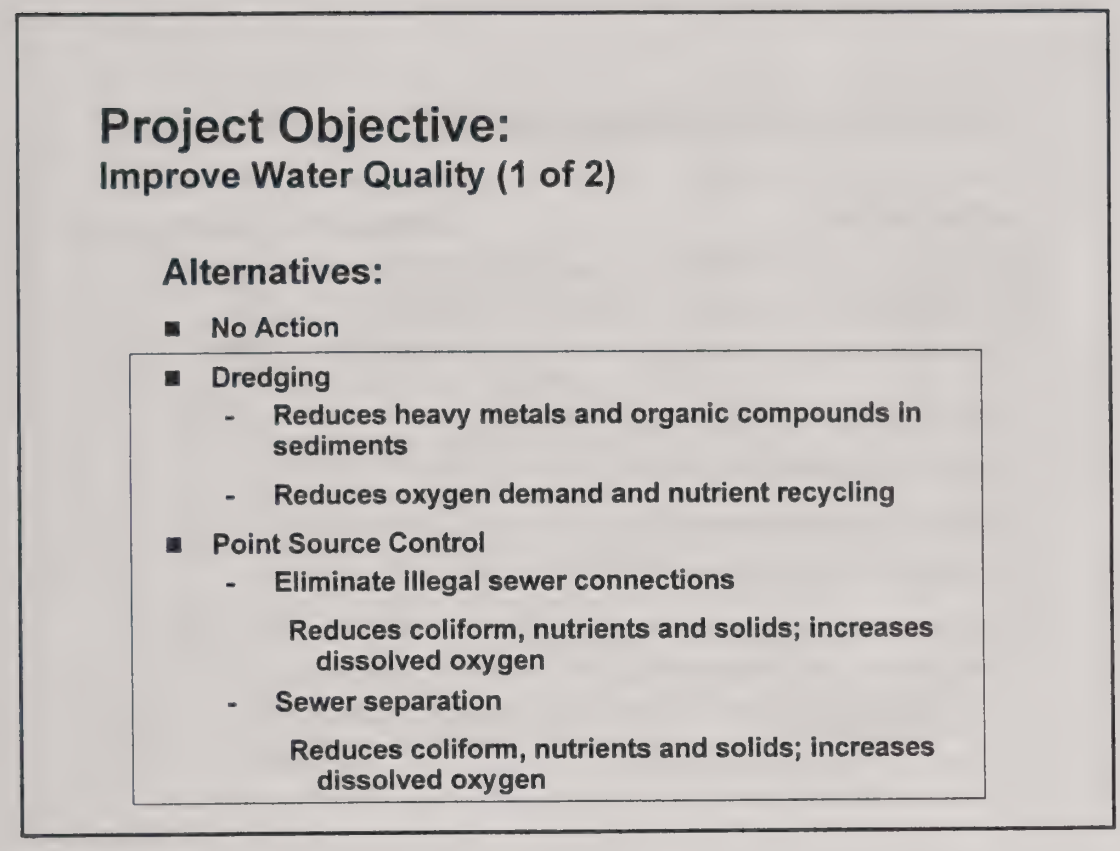
- Maintain existing arch culvert
- Dredge bottom of existing culvert



Screening of Flood Control Alternatives

	Provide Flood Control	Improve Water Quality	Enhance Aquatic/Riparian Habitat	Treat Landscape/Historic Resources	Institute BMPs
Natural Channel daylight/culvert Enlargement/Charles Gate Dredge Only	□	○		□	
Natural Channel daylight/culvert Enlargement/Partial Dredge	□	○		□	
Natural Channel daylight/culvert Enlargement/Fully Dredge	△	□	□	□	□
Engineered Channel daylight/culvert Enlargement/Charles Gate Dredge Only	□	○			
Engineered Channel daylight/culvert Enlargement/Partial Dredge	□	○			
Engineered Channel daylight/culvert Enlargement/Fully Dredge	△	□	□		□
Flood Proofing of Property	□				
Upstream Storage					

△ Fully Meets Objective
□ Partially Meets Objective
○ Addresses some elements of Objective
Blank Does not Address Objective



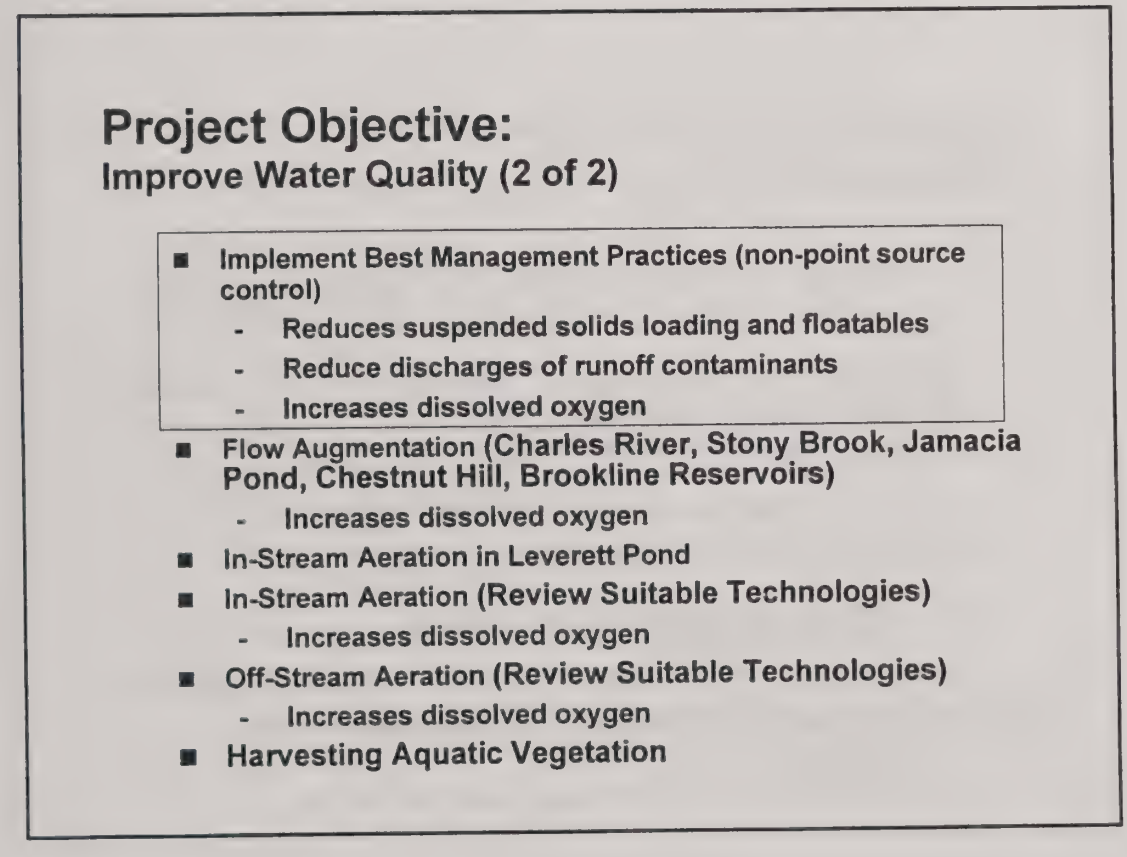
Project Objective:
Improve Water Quality (1 of 2)

Alternatives:

- No Action
- Dredging
  - Reduces heavy metals and organic compounds in sediments
  - Reduces oxygen demand and nutrient recycling
- Point Source Control
  - Eliminate illegal sewer connections

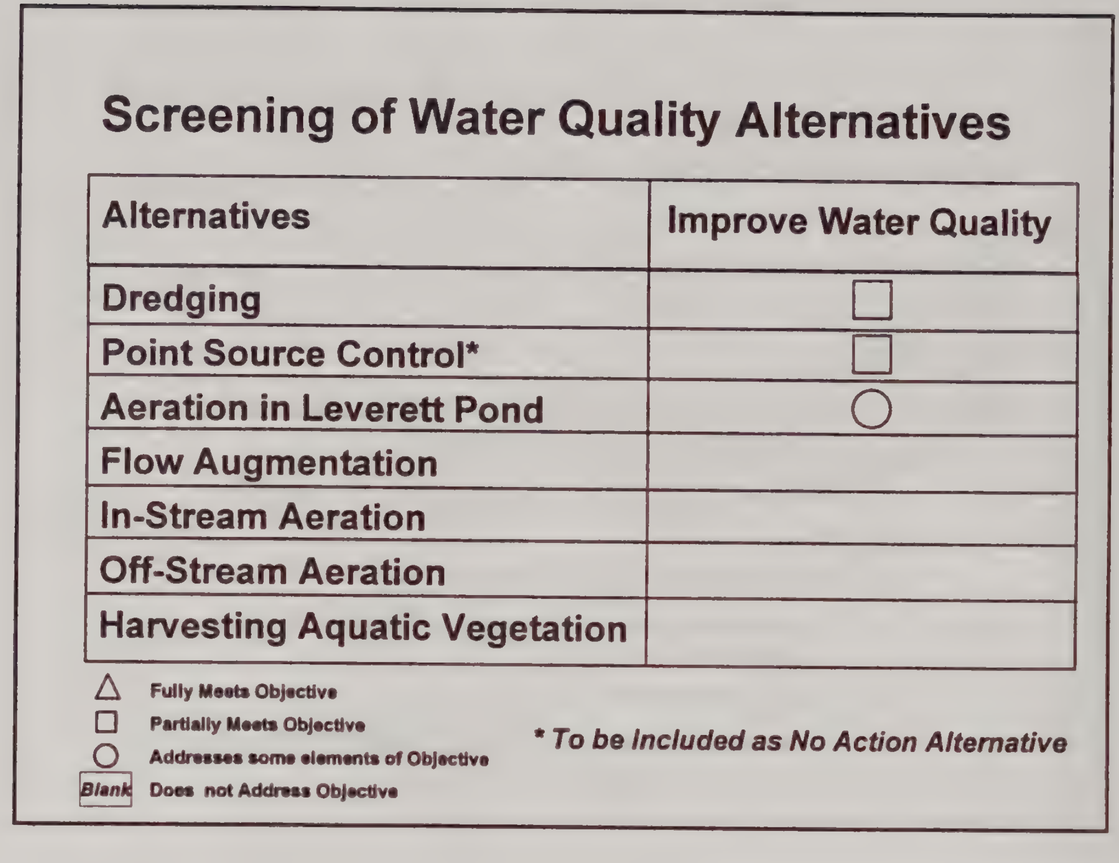
    Reduces coliform, nutrients and solids; increases dissolved oxygen
  - Sewer separation

    Reduces coliform, nutrients and solids; increases dissolved oxygen



Project Objective:
Improve Water Quality (2 of 2)

- Implement Best Management Practices (non-point source control)
  - Reduces suspended solids loading and floatables
  - Reduce discharges of runoff contaminants
  - Increases dissolved oxygen
- Flow Augmentation (Charles River, Stony Brook, Jamacia Pond, Chestnut Hill, Brookline Reservoirs)
  - Increases dissolved oxygen
- In-Stream Aeration in Leverett Pond
- In-Stream Aeration (Review Suitable Technologies)
  - Increases dissolved oxygen
- Off-Stream Aeration (Review Suitable Technologies)
  - Increases dissolved oxygen
- Harvesting Aquatic Vegetation

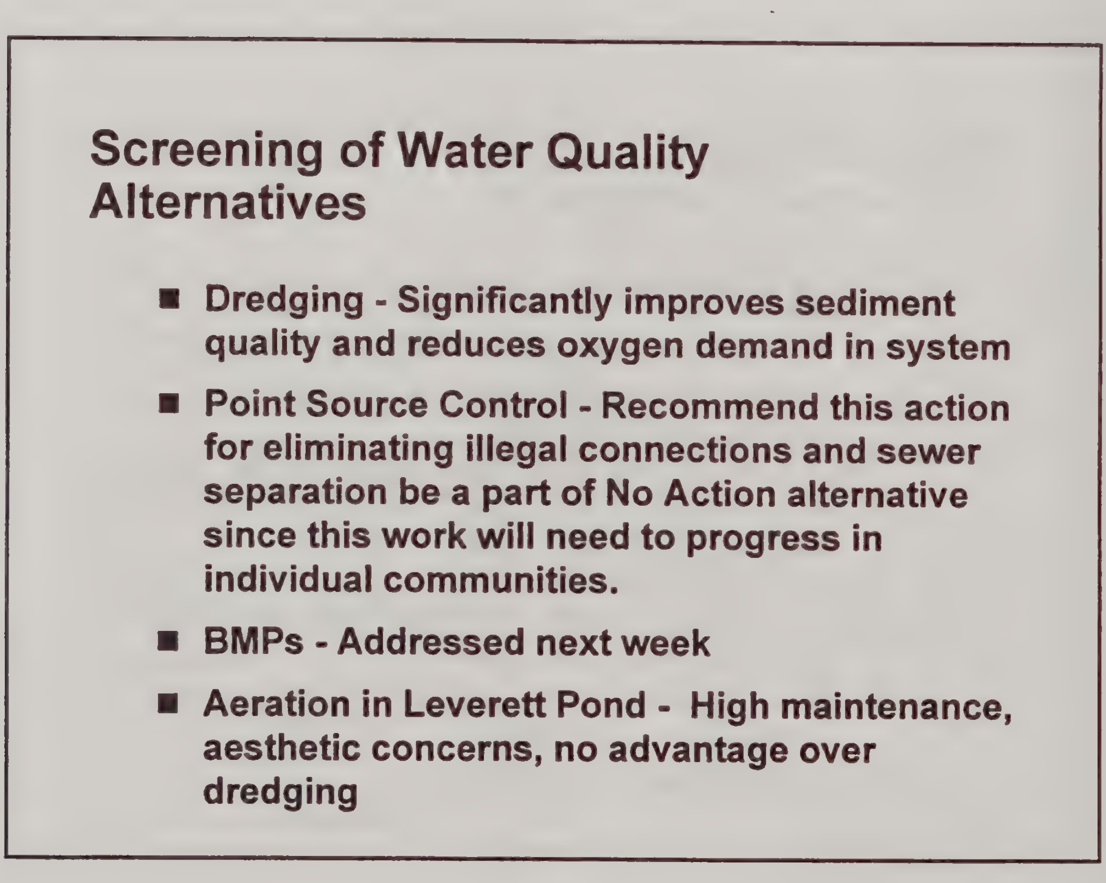


Screening of Water Quality Alternatives

Alternatives	Improve Water Quality
Dredging	□
Point Source Control*	□
Aeration in Leverett Pond	○
Flow Augmentation	
In-Stream Aeration	
Off-Stream Aeration	
Harvesting Aquatic Vegetation	

△ Fully Meets Objective
□ Partially Meets Objective
○ Addresses some elements of Objective
Blank Does not Address Objective

** To be Included as No Action Alternative*



Screening of Water Quality Alternatives

- Dredging - Significantly improves sediment quality and reduces oxygen demand in system
- Point Source Control - Recommend this action for eliminating illegal connections and sewer separation be a part of No Action alternative since this work will need to progress in individual communities.
- BMPs - Addressed next week
- Aeration in Leverett Pond - High maintenance, aesthetic concerns, no advantage over dredging

Screening of Water Quality Alternatives (con't)

- Flow augmentation - Insufficient flow available at high enough DO to significantly effect Muddy River
- In-Stream Aeration - High maintenance and capital cost with no advantage over dredging
- Off-Stream Aeration - High maintenance and capital cost with no advantage over dredging
- Harvesting Aquatic Vegetation - Requires sheet flow for water quality enhancement and significant planting in sediments to affect quality

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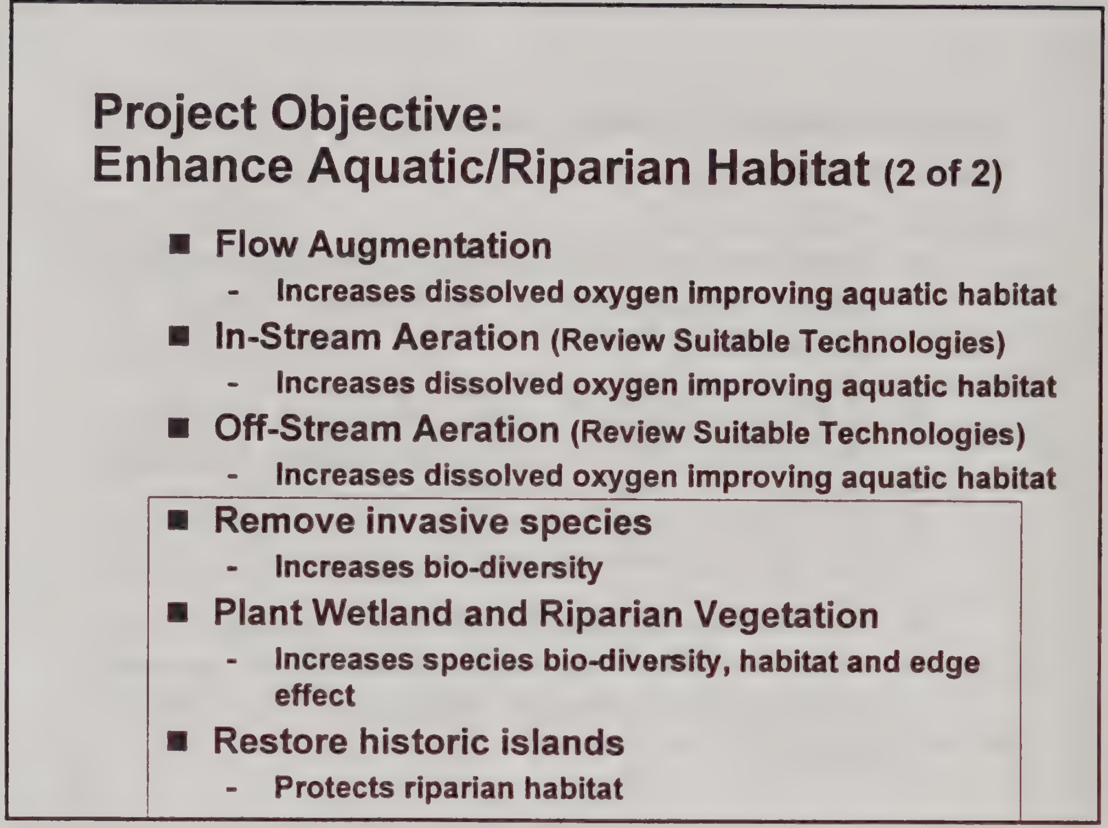
Project Objective:
Enhance Aquatic/Riparian Habitat (1 of 2)

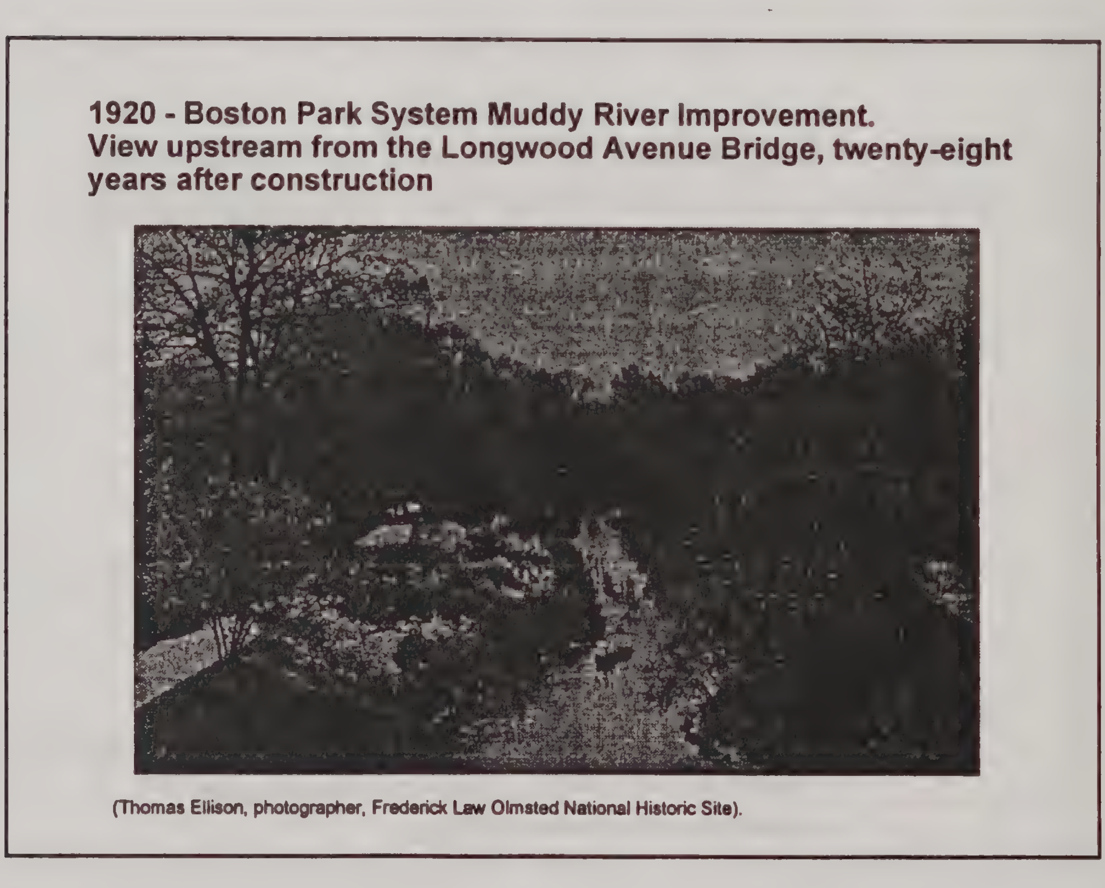
Alternatives:

- No Action
- Dredging
  - Reduces bio-accumulation in endemic species
  - Increases aquatic/riparian habitat
- Point Source Control
  - Reduces coliform, nutrients and solids; increases dissolved oxygen
- Implement Best Management Practices (non-point source control)
  - Reduces suspended solids loading and discharges of runoff contaminants improving aquatic habitat
  - Increases dissolved oxygen



Project Objective:
Enhance Aquatic/Riparian Habitat (2 of 2)

- Flow Augmentation
  - Increases dissolved oxygen improving aquatic habitat
- In-Stream Aeration (Review Suitable Technologies)
  - Increases dissolved oxygen improving aquatic habitat
- Off-Stream Aeration (Review Suitable Technologies)
  - Increases dissolved oxygen improving aquatic habitat
- Remove invasive species
  - Increases bio-diversity
- Plant Wetland and Riparian Vegetation
  - Increases species bio-diversity, habitat and edge effect
- Restore historic islands
  - Protects riparian habitat



1920 - Boston Park System Muddy River Improvement.
View upstream from the Longwood Avenue Bridge, twenty-eight years after construction

(Thomas Ellison, photographer, Frederick Law Olmsted National Historic Site).

Screening of Aquatic / Riparian Habitat Alternatives

Alternatives	Enhance Aquatic Riparian Habitat
Dredging	△
Point Source Control	□
Best Management Practices	□
Flow Augmentation	
In-Stream Aeration	
Off-Stream Aeration	
Remove invasive species	□
Plant Wetland and Riparian Vegetation	△
Restore Historic Islands	△

△ Fully Meets Objective
○ Addresses some elements of Objective
□ Partially Meets Objective
Blank Does not Address Objective

Project Objective:
Treatment of Landscape and Historic Resources (1 of 2)

Alternatives:

- No Action
- Develop a Treatment Plan to respect the Emerald Necklace Master Plan, 1990 ("the continuum")
  - Develop a historic landscape treatment plan
  - Fully dredge the Muddy River and thereby restoring the historic drainage capacity
  - Remove non-native invasive species
  - Daylight and restore the culverted section at Avenue de Louis Pasteur and former Sears parking lot
  - Restore the historic islands in the Muddy River

Project Objective:
Treatment of Landscape and Historic Resources (2 of 2)

  - Restore the island and banks at Avenue de Louis Pasteur to the Olmsted design
  - Enhance wetland and riparian habitat using as much of the Olmsted species list as possible
- Develop a Treatment Plan to respect the Primary and Secondary periods of significance of the Parks
  - Same as above with the following exception
  - Enhance wetland and riparian habitat species from the Olmsted list for the Muddy River

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Screening of Landscape and Historic Resource Alternatives

	Enhance Aquatic/Riparian Habitat	Treat Landscape/Historic Resources	Impact on Current Uses
Treatment Plan to respect Emerald Necklace Master Plan (" The Continuum")	△	□	△
Treatment Plan to respect Primary/ Secondary periodsof significance	△	△	○

△	Fully Meets Objective
□	Partially Meets Objective
○	Addresses some elements of Objective
Blank	Does not Address Objective

Screening of Landscaping and Historic Resource Alternatives

- Treatment Plan respecting the continuum of Emerald Necklace Master Plan - Recognizes changes to park environment and rehabilitates or restores those resources that exist.
- Treatment Plan respecting the Primary and Secondary Period of Significance - Would require removing current resources and uses (such as victory gardens, memorials, roadways) Would not follow currently accepted Historic Resource methodology.

Recommended Project for EIR (1 of 4)

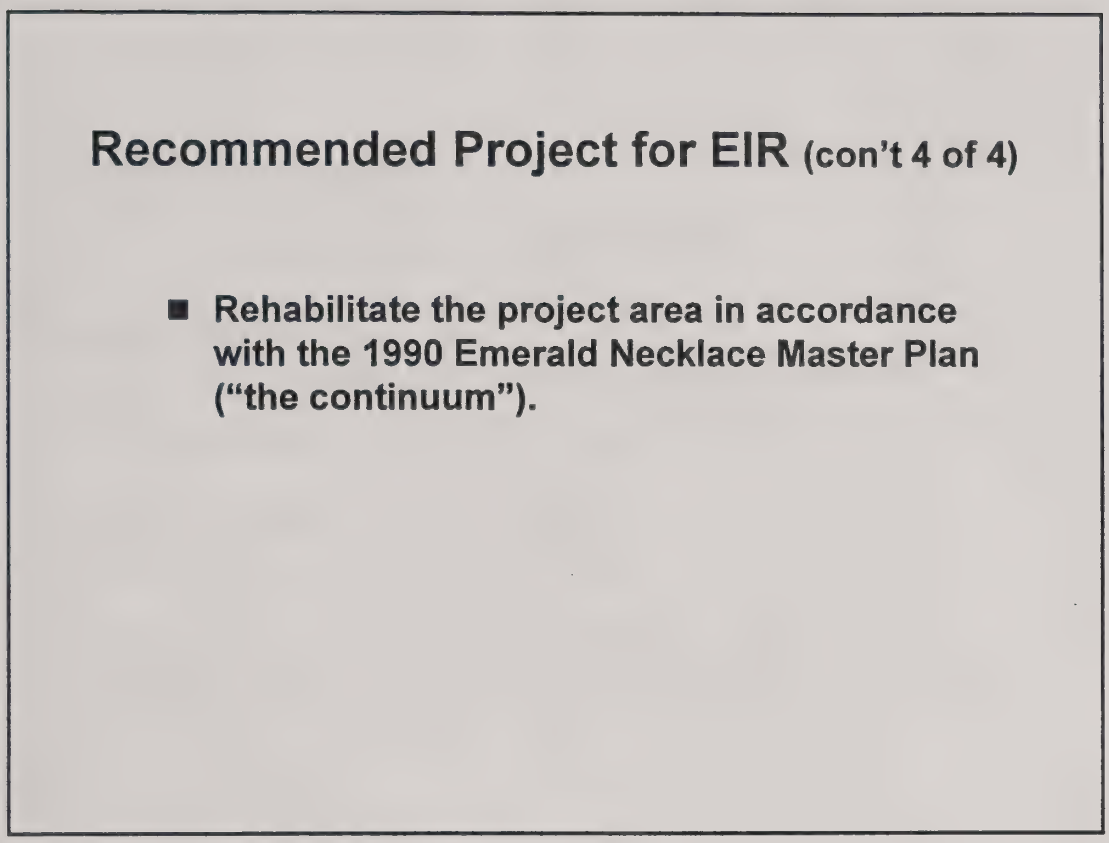
- Daylight former Sears Parking Lot and upstream of Fens Bridge with natural channel configuration following historic shoreline where possible.
- Fully dredge Muddy River primarily using hydraulic dredging method with a primary group of 6 staging areas. (This includes Charlesgate as first element of project)
- Replace culverts under Riverway, Brookline Avenue with arch culverts.

Recommended Project for EIR (con't 2 of 4)

- Remove invasive species along entire length of project area primarily using mechanical means from the water.
- Plant wetland and riparian vegetation along banks where invasives are removed and along banks with no vegetation to stabilize banks and reduce erosion.

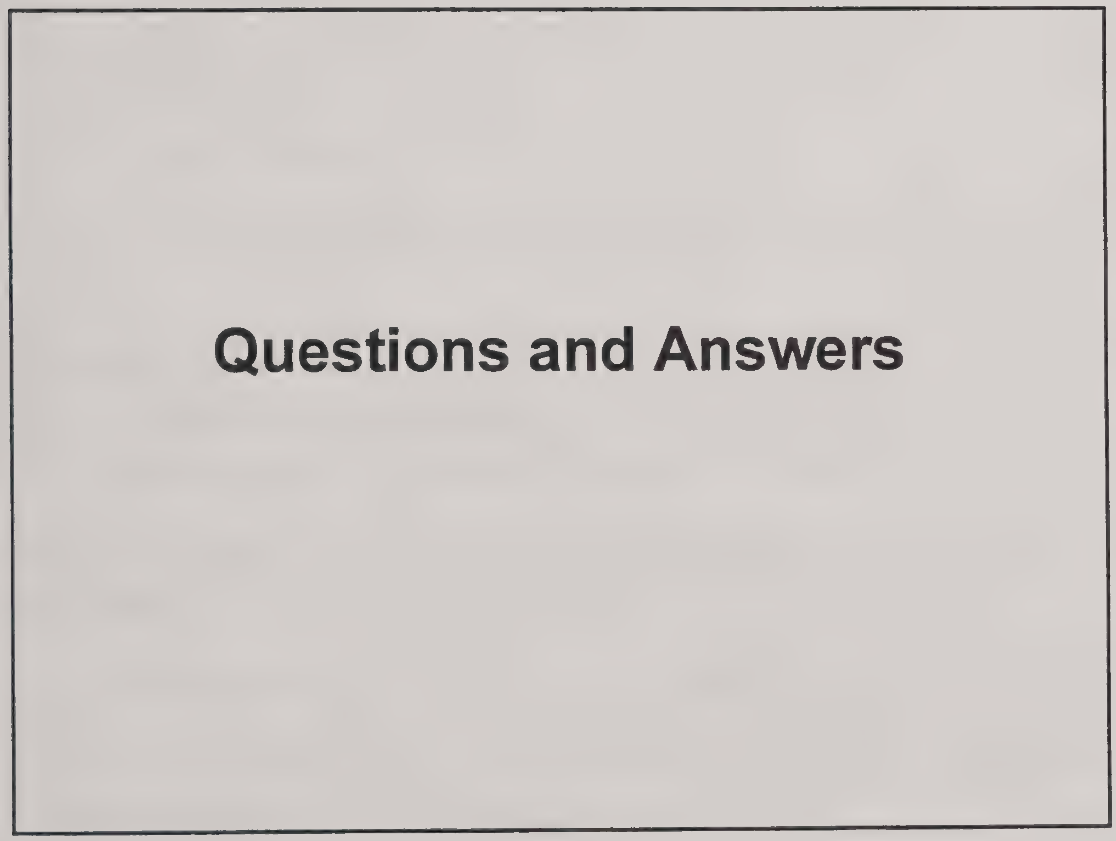
Recommended Project for EIR (con't 3 of 4)

- Restore historic islands to increase wildlife habitat and reclaim the Olmsted historic landscape.
- Provide sandy gravel bottom in selected river / pond areas to encourage fish spawning.
- Restore Babbling Brook downstream of Willow Pond by modifying current outlet.
- Rehabilitate bank areas along the project area to restore historic shorelines where possible.



Recommended Project for EIR (con't 4 of 4)

- Rehabilitate the project area in accordance with the 1990 Emerald Necklace Master Plan ("the continuum").



Questions and Answers

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – October 23, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II Follow-up: Regional Transportation Issues
Fran Beatty, A.L.S.A, Senior Landscape Architect for Historic Parks
Boston Parks and Recreation Department

III Project Update
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc. (CDM)

IV Presentation: Alternatives Analysis
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

Q&A/Discussion with CAC

V Questions and Answers (General Public) Wrap Up

Summary

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian opened the meeting and welcomed CAC members.

John Burckardt reminded CAC members of the public meeting scheduled for November 8 and encouraged CAC members to "spread the word" to others about attending.

Mr. Burckardt reported that 13 CAC members participated in the site visit along the Muddy River on October 13, 2000. Mr. Burckardt said that CAC members commented how helpful it was to see the problems along the River first hand. He also reported that the site visit with the regulatory agencies on October 20, 2000 also went very will.

Susan Jeghelian conducted a brief process review with CAC members to gauge their satisfaction with the format and content of CAC meetings and whether more time is needed for discussion. CAC members responded favorably regarding the current format and added that adjustments to the format and content of CAC meetings can be made as needed in the future.

II Follow-up: Regional Transportation Issues

Fran Beatty reported on the regional transportation issues as a follow-up from the CAC discussion at the September 28, 2000 meeting. Ms. Beatty has met with staff from the Boston Transportation Department to brief them on the Muddy River project and to get an update on the work of the Fenway Planning Task Force, which is looking at transportation issues in the Fenway related to a new ball park and other development efforts. Ms. Beatty added that the CAC and the CDM team were added to the mailing list of the Fenway Planning Task Force.

The Boston Transportation Department hired Vollmer Associates to evaluate the Sears rotary. This project is being conducted independent of the Muddy River Restoration project. At a public meeting on October 19, 2000, Vollmer Associates presented a summary of existing alternatives to the present roadway configuration at the Sears rotary. Vollmer is conducting a detailed traffic analysis to determine the amount of local traffic contributing to the traffic congestion and the amount of through traffic that is causing the traffic problems in the area. At a public meeting on November 13, 2000, Vollmer will present various improvement alternatives.

CAC members asked if Vollmer and/or Boston Transportation Department staff are giving consideration to removing the "jug handle" on Park Drive? Ms. Beatty responded that Vollmer is assessing the feasibility of removing the jug handle. Many CAC members would like to see the jug handle removed so the river could be further opened up and a better connection made between the Back Bay Fens and the river upstream of Brookline Avenue.

III Project Update

Bruce Conklin presented the following update on the project for activities conducted during October.

- Sediment sampling program is focusing on analysis and re-sampling of sites where initial sampling results varied widely from other results in the immediate adjacent area.
- The appeal period to contest the wetlands delineations under review by the Boston and Brookline Conservation Commissions has expired. No challenges to the delineations presented to the conservation commissions were filed.
- Documentation of the existing conditions is nearly complete.
- CDM project team staff met with the Boston Transportation Department and the Metropolitan District Commission to discuss traffic issues related to truck traffic generated proposed staging area locations.
- The alternatives matrix and evaluation of alternatives is complete. The cost analysis for each alternative is underway.

IV Presentation: Alternatives Analysis

Mr. Conklin explained the objectives of the presentation and referenced the handouts, which are included as Attachment 2. Mr. Conklin's explained that the alternatives analysis is a culmination of previous presentations made by the CDM team and input provided by the CAC to the Boston Parks and Recreation Department and CDM team.

Alternatives to achieve each project objective were evaluated and presented. CAC members asked questions throughout the presentation. A summary of the questions and responses provided is presented below.

Q&A with CAC

Why was upstream storage not recommended as a flood control alternative?

Mr. Conklin responded that the 170 million gallons represents the excess peak flow that contributes to the flooding and bank disturbance. In order to reduce this excess peak flow an area equivalent to 9 Leverett Ponds at 3 feet deep would be needed to store the flow. He added that during the October 1996 storm, the MBTA Kenmore Station (and subway tunnel) in effect provided some amount of flood relief (estimated at 30 million gallons) for Brookline and the Fenway. If the river did not overflow into the station, more flooding in areas adjacent to the river would have occurred.

Could upstream storage help address bank disturbance and scouring during periods of peak flow and peak river velocity?

Mr. Conklin responded that the 170 million gallons represents the peak flow that causes the flooding and bank disturbance. He added that during the October 1996 storm, the MBTA Kenmore Station in effect provided a significant amount of flood relief for Brookline and the Fenway. If the river did not overflow into the station, more flooding in areas adjacent to the river would have occurred.

How does the flood control alternative of full bank-to-bank dredging help facilitate the implementation of BMPs?

Mr. Conklin stated that full dredging enables the riverbanks to be restored therefore addressing a major source (bank erosion) of sediment load to the river.

Is the water quality data that was collected by CDM available to the CAC, in particular the data on dissolved oxygen?

Yes, Mr. Conklin responded that the raw water quality data would be made available to the CAC. He also added that it will be included in the Draft Environmental Impact Report.

What is the limit of the wetlands plantings?

Mr. Conklin said the limits on the wetlands plantings will range from between 4 and 10 feet from the water's edge. Marion Pressley added that the amount of invasive removal will help determine the amount of wetlands plantings required along each segment or area of the river.

Will the plant massings be similar to the photo example included in the PowerPoint presentation for this meeting?

Ms. Pressley said the plant massings will be like the example in the photograph except that the plantings in the photo were more mature than the species that will be planted. Ms. Pressley added that part of the purpose of the plant massings is to restore the biodiversity of plant species, which will also help better maintain the riverbanks and minimize bank erosion.

A CAC member commented that the plantings are in essence an excellent best management practice (BMP) for controlling bank erosion and limiting public access to the water's edge.

Mr. Conklin emphasized that the plantings will be limited to land areas that are disturbed during the project and that other plantings beyond this would be done in the future as part of another project.

On a percentage basis, how much of the bank areas along the river will be disturbed and/or require bank stabilization.

Mr. Conklin estimated 70%-80% of the riverbanks will be treated for stabilization to better control bank erosion.

In the areas where Phragmites *and other invasives will be removed, how will these areas be re-vegetated?*

Mr. Conklin explained that the original, historic shoreline will be preserved as much as possible. Invasives removed from the land will be replaced with loam and a cross section of plantings.

Will land restoration take place in other impacted or disturbed areas (other than areas where Phragmites *and other invasives are removed)?*

Mr. Conklin responded yes. Other park areas that are disturbed such as staging areas, will be restored and replanted. Repair of damaged areas will be done in accordance with the historic planting and treatment plan. Mr. Conklin added that implementation of some structural BMPs will likely result in damage to parkland areas. Responsibility for restoring these damaged areas will reside with the specific public agency that implements the BMP.

CAC members commented that this will be an expensive project. They are concerned that, if full funding cannot be obtained, the project may be broken up and the entire scope, as presented in the EIR, might not be implemented."

(The comment was noted. The proponents are currently exploring alternative funding approaches to allow for the implementation of the entire scope of the project.)

Mr. Conklin added that some of the smaller project elements constructed as a part of the larger elements could probably be retained since some of these elements were required to build the major infrastructure. For example, if a headwall is required to be built, the historic treatment of that headwall should still be included in the project.

CAC members concluded stating that the process for defining the project scope and limits, in the likely event there are insufficient funds to complete the entire project, should be clearly presented to the CAC and the public.

Regarding the recommended project alternatives that meet the landscape and historic resources objectives, the CAC members commented that the present day uses of the park need to be factored into the analysis.

Ms. Pressley responded that the consultant team is focusing on present day park uses such as walking, jogging and passive recreation.

CAC members asked if there is an overall vision statement for the project. They suggested that the project team should consider an overall vision statement that conveys the clear sense that this is an integrated and holistic project.

Mr. Conklin responded that the project team will draft a vision statement and present it in the Draft Environmental Impact Report.

A CAC member suggested that the river be navigable to the extent possible.

Mr. Conklin said we would include as part of the total project cost estimate, some means to facilitate or at least provide the opportunity for canoeing and other contact recreation on the river.

A CAC member asked how the Environmental Impact Report will conform to the Emerald Necklace Master Plan and asked that the Muddy River restoration project be presented in the context of the larger long-term Emerald Necklace improvements.

A CAC member commented that project seems to represent two projects, a flood control project and a landscaping improvements project. If funding is not available to complete all project elements, the CAC member is concerned that the landscaping improvements will sacrificed.

Several CAC members asked about the distribution of the Environmental Impact Report to the public and what efforts will be made to publicize its availability and encourage the public to review the document and provide comments to the Secretary of Environmental Affairs.

Mr. Conklin responded that the document will be distributed to the Boston Parks and Recreation Department, the Town of Brookline, and the CAC. It will be submitted to the Massachusetts Environmental Policy Act (MEPA) Unit of the Executive Office of Environmental Affairs and regulatory agencies. *Note: Additional copies will be available upon request. Other copies will be available at public locations (e.g., certain libraries, municipal offices).*

Will there be a required public hearing under the National Environmental Policy Act (NEPA) or MEPA regulations?

Laura Rome, of the MEPA Unit, said that a public hearing is not required under MEPA but a hearing could be required by the Secretary of Environmental Affairs.

CAC members commented on the need for the Environmental Impact Report to have an interesting and well-written executive summary.

CAC members briefly discussed the upcoming public meeting on the project on November 8, 2000. CAC members encouraged the project team to articulate the vision the project is seeking to achieve and to present the project in a positive and upbeat tone.

A CAC member asked if the public meeting location could be changed to Dodge Hall?

Fran Beatty said that the public meeting location is the Raytheon Amphitheater at the Egan Center. The meeting location is a firm commitment. Ms. Beatty added that the project team will work with Northeastern University to ensure clear directions to the Egan Center are provided to the public.

A CAC member commented on oil odors in the area by Deaconess Hospital and at the outlet of the Longwood Avenue drain questioned the sources, including the potential of leaking oil from vehicles.

Mr. Conklin said the project team will look into this.

In the parkland area by Netherlands Road, what was the maintenance plan after the Japanese Knotweed was removed and replaced with grass?

Ms. Pressley responded that the Boston Parks and Recreation Department has regularly mowed this area and that has helped prevent the regrowth of the invasive plant.

V Questions and Answers (General Public) Wrap Up

What is the format for the November 8, 2000 public meeting?

Ms. Beatty said that the format of the meeting has not been finalized. The seating for the public will be a theater style layout.

Next Meeting

The next meeting of the Emerald Necklace CAC is scheduled for Monday, October 30, 2000. The meeting will be held in the Egan Engineering/Science Research Center in the Raytheon Amphitheater, Room 240.

The meeting will focus on a presentation on the best management practices (BMP).

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – CDM Consultant Team Presentation

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

October 23, 2000

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	Frances Allou Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Emerald Necklace Citizens Advisory Committee

Meeting

October 23, 2000

Sign-In Sh

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	A Levee
John A.	Martin	Emerald Necklace Conservancy	
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	Paul Mentag
Mary Crain	Penniman	Charles River Watershed Association	Mary Crain Pennima
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	Marian Sabal
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

Emerald Necklace Citizens Advisory Committee

Meeting

October 23, 2000

Sign-In Sheet

\\parkamai\bospark\Muddy\CAC Meetings\CAC-11 Oct 23, 2000\[CAC Sign-in Oct 23 2000.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Carlton L Noyes	Cortell	781 890 3737 x128	Cortell@Cortell.com
Marion Pressley	Pressley Assoc.	617-491-5300	mpressley@pressley.com
John Burckardt	CB Boston Pks	617 635 4505	jburckardt@ci.boston.ma.us
Fran Beatty	Bos. Parks	635-4505	beatty@ci.boston.Ma.US
Richard Heidebrecht	USACE	978-318-8513	richard.v.heidebrecht@usace.army.mil
Simone Auster	Emerald Necklace Conservancy	617-722-9823	emeraldnecklace.org
Claire Fluery	95 Park DR. Boston, Ma 02215	617-266-[illegible]	
Jalal Ghaemghami	BPHC	617-534-5966	
JJ CALLAHAN	CORTELL	(781) 890-3737 x134	CORTELL@CORTELL.com
LAURA ROME	EOEA/MEPA	617-626-1030	laura.rome@state.ma.us
Bob McDonnell	N.U.	617-373-5330	r.mcdonnell@neu.edu
Jan Henderson	MASCO	617 632-2762	jhenderson@masco.harvard.edu (please via A)
Gina Crandell	117 Stedman	617 731 0503	crandell@gsd.harvard.edu
Donna Denio	12 Fenwick Rd, Winchester	781-729-2560	ddenio@mediaone.net
Susan Jeghelian	MODR	617-727-2224 x21174	susan.jeghelian@state.ma.us

MEMORANDUM

DATE: October 4, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Upcoming Meeting Schedule; Other Information

Schedule of Upcoming Meetings

No.	**Day**	**Date**	**Time**	**Topic(s)**	**Location**
11	Mon.	23-Oct-2000	6 PM	Alternatives Evaluation	Egan Center, NU
12	Mon.	30-Oct-2000	6 PM	Alternatives Evaluation, Part 2: BMP Alternatives Analysis	Egan Center, NU
---	Wed.	08-Nov-2000	6 PM	*Public Meeting*	Egan Center, NU
13	Wed.	15-Nov-2000	6 PM	Mitigation & Costs	Faculty Center, NU
14	Thur.	25-Jan-2001	6 PM	EIR/EA Presentation	Egan Center, NU

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Enclosures:

1. Meeting Summary, CAC Meeting of September 19, 2000
2. Meeting Summary, CAC Meeting of September 28, 2000.

   *Please review the 2 meeting summaries. Submit written comments within 7 calendar days John Burckardt by fax(617-635-3256) or e-mail (*jburckardt@ci.boston.ma.us*) The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.*

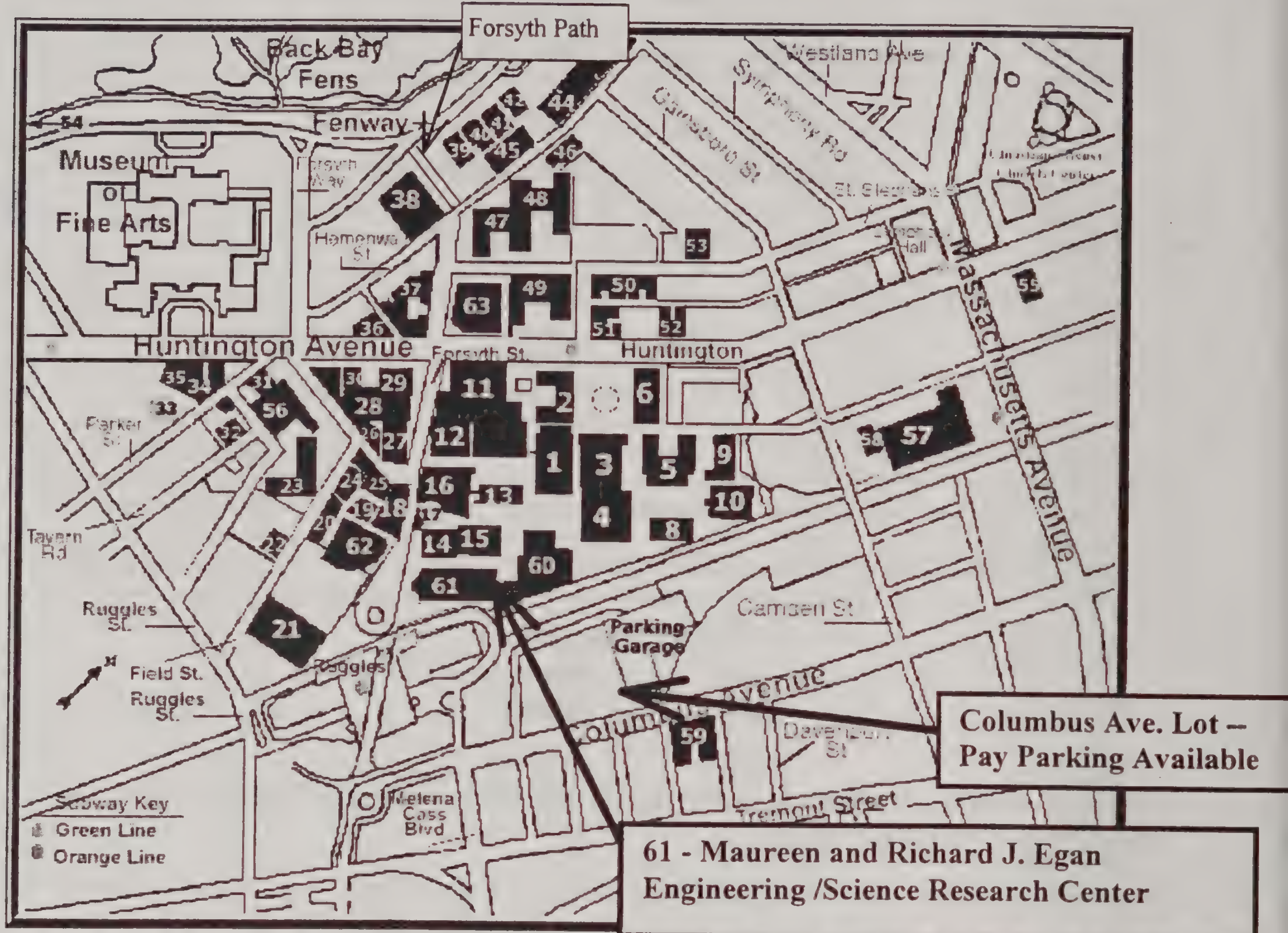
3. Glossary of Terms –*Definitions for September 28, 2000 CAC Meeting*
   Please place in Tab #5 of the CAC Workbook
4. Revised List of Abbreviations — Please place in Tab #5 of the CAC Workbook

Directions to

Maureen and Richard J. Egan Engineering /Science Research Center

Raytheon Amphitheater -- Room 240

NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot -- Pay Parking Available

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee

Northeastern University, Egan Engineering /Science Research Center

Raytheon Amphitheater — Room 240

Monday, October 30, 2000
6:00p.m. - 8:30p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:15

Susan Jeghelian*, MA Office of Dispute Resolution, CAC Facilitator*

John Burckardt*, Project Manager*

II. **Follow-up: Planning for Public Meeting (Nov. 8, 2000)** 6:15 - 6:40

Fran Beatty, A. L. S. A., *Senior Landscape Architect for Historic Parks*
Boston Parks & Recreation Department

III. **Presentation: Best Management Practices** 6:40 – 7:40

David C. Noonan, P. E., *Vice President*
Camp Dresser & McKee Inc.

Q&A/Discussion with CAC 7:40 – 8:20

IV. **Questions and Answers (General Public) Wrap Up** 8:20 – 8:30

Camp Dresser & McKee Inc.

Muddy River Restoration Project

Best Management Practices Plan

October 30, 2000

Dave Noonan, P.E.

Emerald Necklace Citizens Advisory Committee Presentation

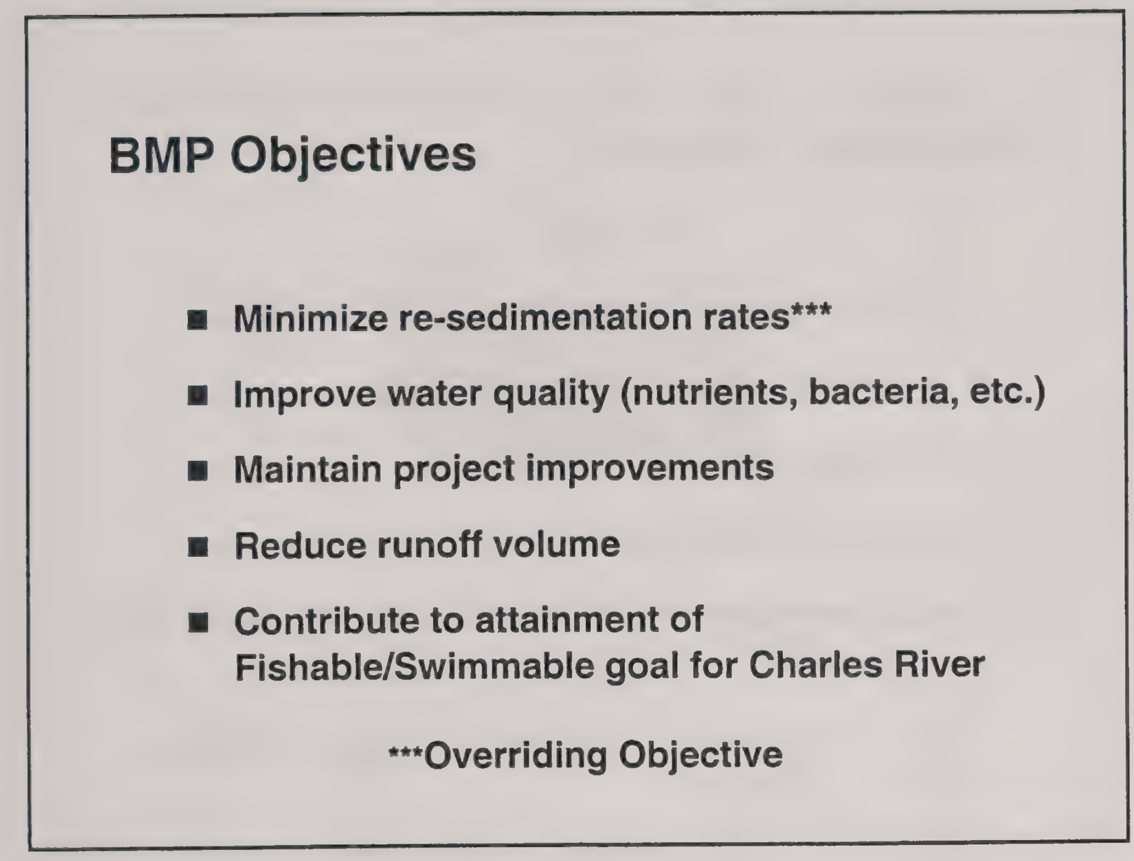
Emerald Necklace Environmental Master Plan and Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement

Outline of Presentation

- Objectives
- Sediment Sources
- Status of BMPs in Watershed
    - historical sediment loadings
    - capital improvements
    - existing measures & effectiveness
    - roles and responsibilities
- Recommendations to Improve BMP Plan
    - non-structural, structural, flow reduction
    - demonstration projects

Phase 1 Project Objectives

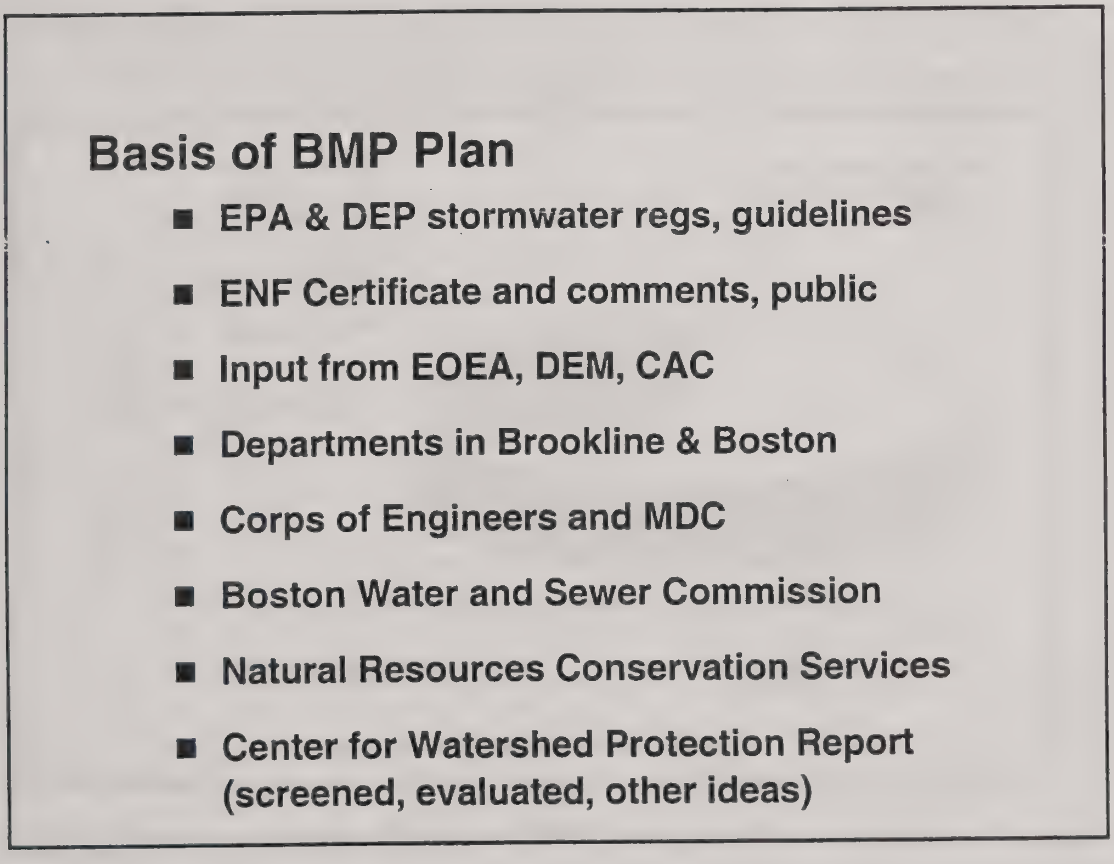
- Increase flood control
- Improve water quality
- Enhance aquatic / riparian habitat
- Restore landscape and historic resources
- Institute Best Management Practices in Muddy River system



BMP Objectives

- Minimize re-sedimentation rates***
- Improve water quality (nutrients, bacteria, etc.)
- Maintain project improvements
- Reduce runoff volume
- Contribute to attainment of Fishable/Swimmable goal for Charles River

***Overriding Objective



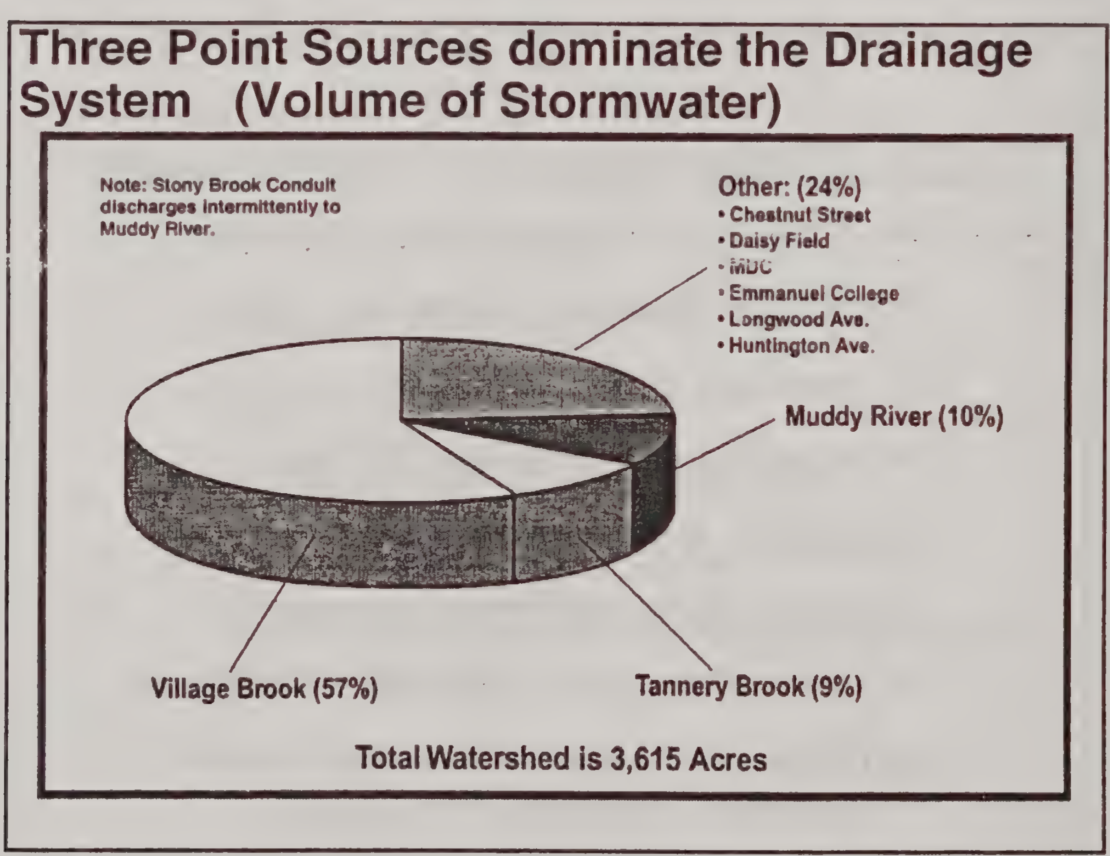
Basis of BMP Plan

- EPA & DEP stormwater regs, guidelines
- ENF Certificate and comments, public
- Input from EOEA, DEM, CAC
- Departments in Brookline & Boston
- Corps of Engineers and MDC
- Boston Water and Sewer Commission
- Natural Resources Conservation Services
- Center for Watershed Protection Report (screened, evaluated, other ideas)

Sediment Sources

- Eroding banks & uplands (30% to 50%)
- Decayed leaves & brush (25%)
- Street sanding (30% to 60%)
- Construction sites (less than 10%)
- Typical urban runoff - litter, animal waste (5% to 25%)

Sources: Corp of Engineers, US EPA, MADEP

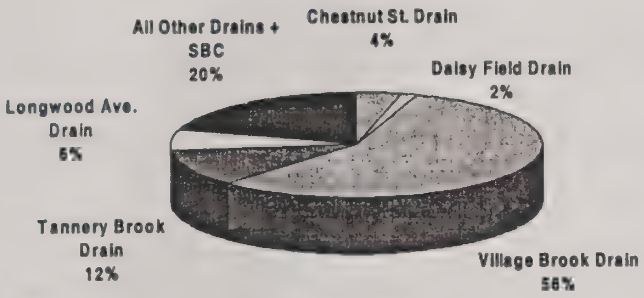


Three Point Sources dominate the Drainage System (Volume of Stormwater)

Note: Stony Brook Conduit discharges intermittently to Muddy River.

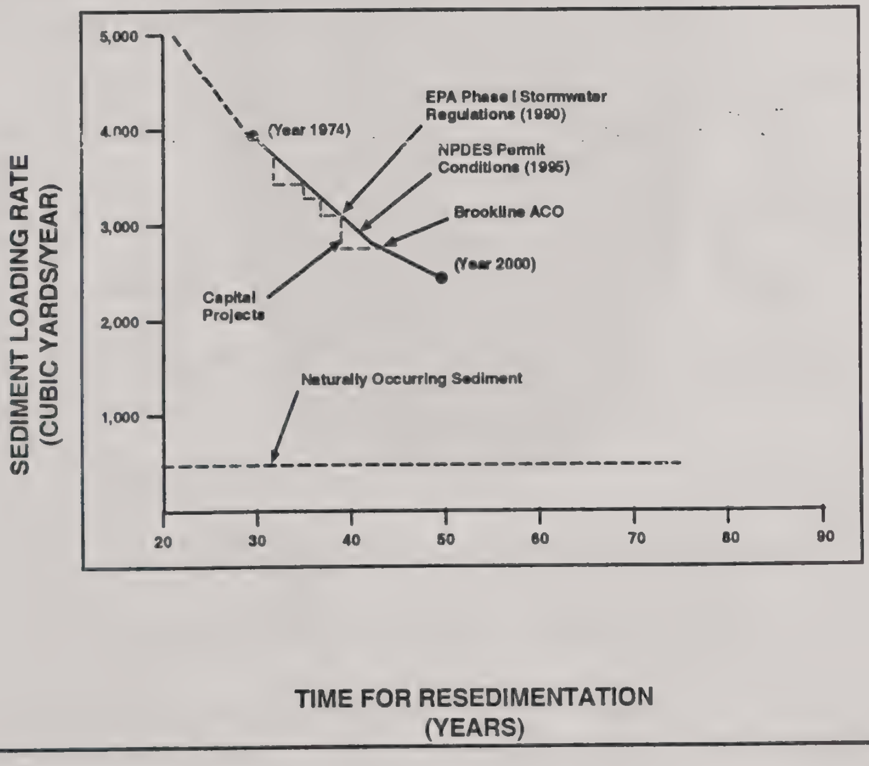
Total Watershed is 3,615 Acres

Sediment Loads from Point Sources Only

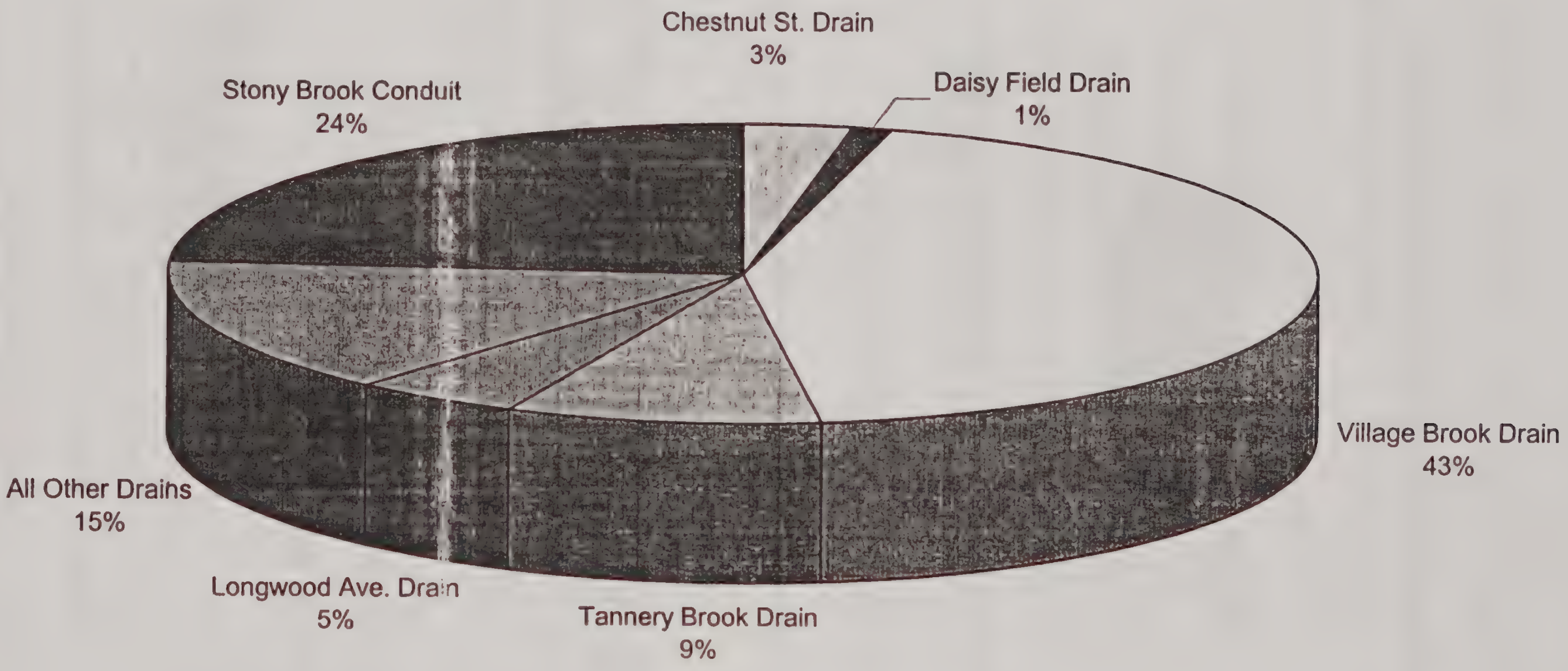


Source: Hydraulic Modeling, Sediment Quantity and Sediment Quality Issues on the Muddy River, CDM 2000

Sediment Loads Over Time



Percentage of Annual Sediment Load (TSS) by Source



Source: *Hydraulic Modeling, Sediment Quantity and Sediment Quality Issues on the Muddy River* (CDM, 2000)

Capital Improvements over Time
Boston

- Removal of 11 Illegal Connections to Muddy River (1990)-$35,000
- Fenwood Road Particle Separator (1992)–$25,000 (construction only)
- Jamaica Pond particle separator (1993)--BPRD
- Muddy River Conduit Diversion Gate (1995)--$70,000
- Frances Street Siphon (1998)–$33,600
- Boston Catch Basin Improvement Program (2000-2001)–$2,500,000
- Cleaning of Stony Brook Conduit (2001)–$6,000,000
- Stony Brook Sewer Separation (2001)--$37,200,000

Capital Improvements--Brookline

- Removed 33 sewer cross -connections in Tannery Brook (1989)–$215,000
- Sewer cross-connection investigation at Longwood (1995)–$55,000
- Removed 4 cross-connections at Longwood (1995)–$20,000
- Village and Tannery Brooks cross-connection removal (1996-7)—$653,000
- Bridge restoration (1997)–$900,000
- Stormwater and Wastewater Master Plans (1998)--$350,000
- Kendall St. Garage site remediation (ongoing)–$540,000
- Restoration of Olmsted Park (1999)-$1,000,000

Capital Improvements Planned by Brookline in 2000/2001

- Leverett Pond dredging–$210,000
- Allerton Overlook improvements (landscape)–$300,000
- Babbling Brook: Olmsted Park Improvements Phase III–$400,000
- Walnut Street sewer separation–$1,200,000
- Monmouth Street sewer reconstruction–$30,000
- Kendall Street Garage remediation (con.)–$500,000
- Willow Pond remediation (cash contribution)–$500,000

Matrix of Specific Measures By Community

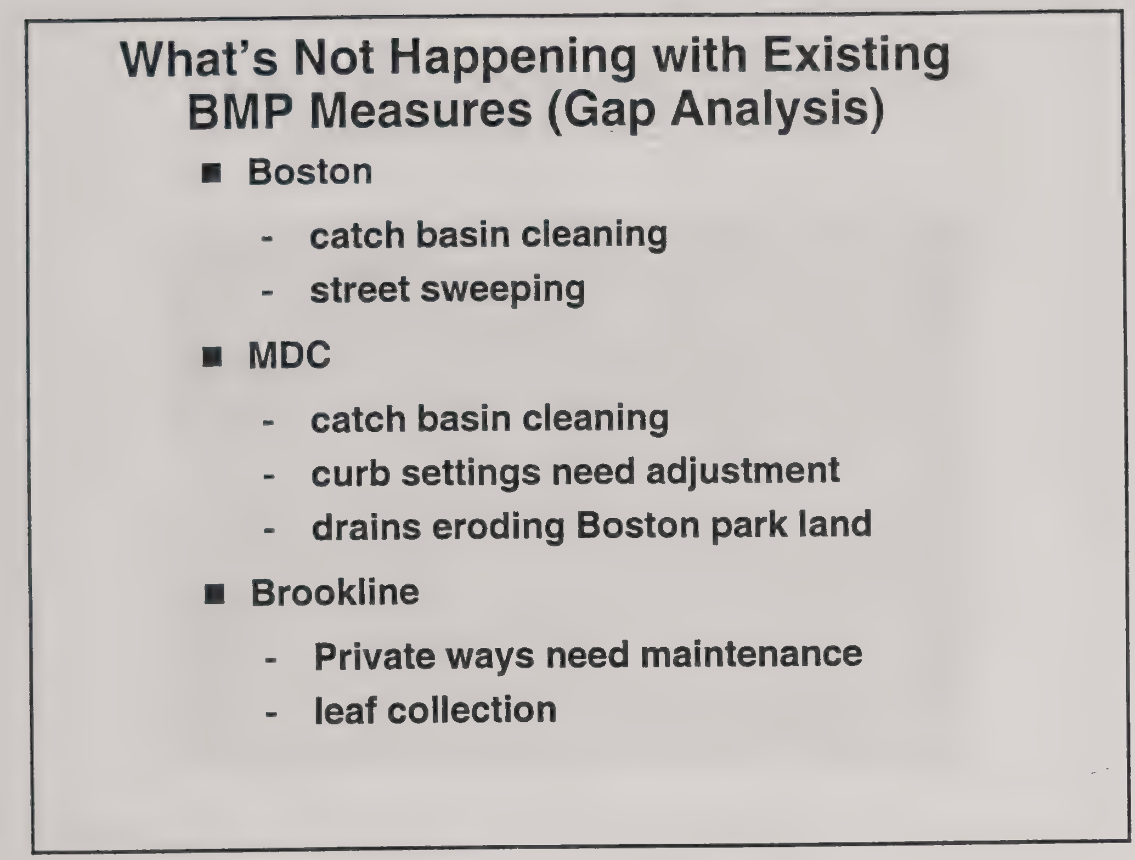
BMP	Brookline	BWSC	Boston DPW	BPRD	MDC
Catch Basin Maintenance Program	●	●	○	○	●
Catch Basin Stenciling	●	●	○	○	
Structural Water Quality Controls	●	●	○	○	
Discharge Outfall Screening & Inspection		●	○	○	○
Illegal Sanitary Sewer Connections	●	●	○	○	○
Storm Drain Maintenance	●	●	○	○	
RoadwayDe-icing	●	○	●	○	●
Street Sweeping	●	○	●	○	●
Trash Barrel/Litter Control	●	○		●	●
Lawn Maintenance/Leaf Removal	●	○	●	●	●
Rodent Control	●	○	●	●	○
Roadway Patching /Repair	●	○		○	●
Goose Control	●	○	○		○
Pooper Scooper Ordinance		○			○
Water Quality Controls for New Development	●		○	○	○
Intermunicipal Connections	●	○	○	○	○
Household Hazardous Waste & Education	●	●	●	○	○
Waste Oil Collection Program	●	●	●	○	○
Stormwater Guidelines for Selected Industries and Businesses		●	○	○	○

LEGEND

● Best Management Practice in Place

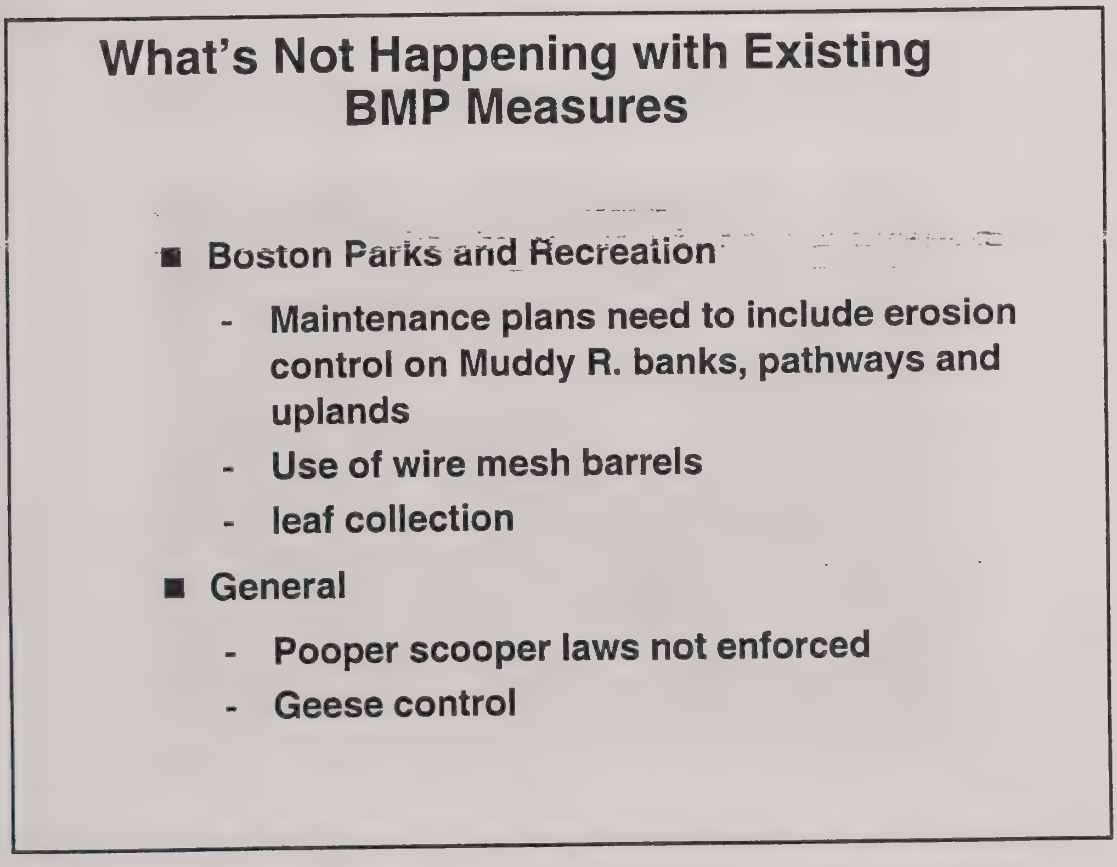
○ Not Applicable

● City of Boston Inspectional Services Department



What's Not Happening with Existing BMP Measures (Gap Analysis)

- Boston
  - catch basin cleaning
  - street sweeping
- MDC
  - catch basin cleaning
  - curb settings need adjustment
  - drains eroding Boston park land
- Brookline
  - Private ways need maintenance
  - leaf collection



What's Not Happening with Existing BMP Measures

- Boston Parks and Recreation
  - Maintenance plans need to include erosion control on Muddy R. banks, pathways and uplands
  - Use of wire mesh barrels
  - leaf collection
- General
  - Pooper scooper laws not enforced
  - Geese control

Back Bay Fens near Brookline Avenue upstream of the Fens Bridge

Riverway upstream of Netherlands Road

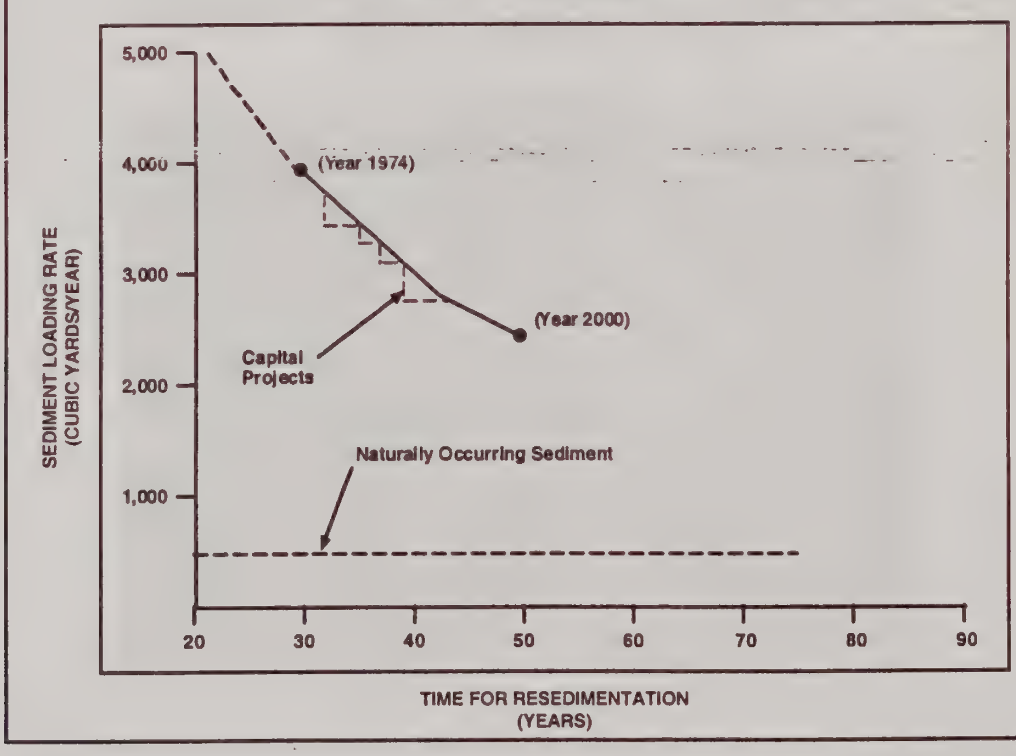
MDC catch basin in Boston near Netherlands Road

Pedestrian trail around Ward Pond near outlet to brook

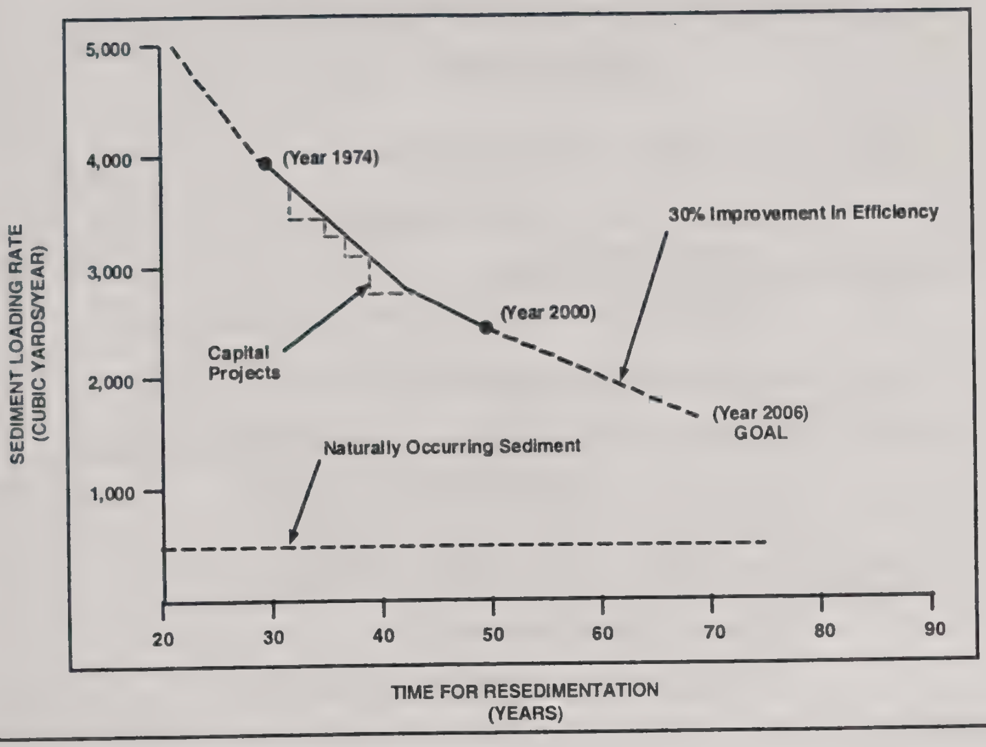
Responsibilities By Agency (aka the need for a Communication Plan)

- Boston Transportation Dept.--street signs
- Boston Police Dept.--ticketing
- Boston Transportation Dept.--towing
- Boston Public Works Dept.--street maintenance
- Boston Water & Sewer Commission-catch basins
- Metropolitan District Commission--parkways (except for capital projects)

Sediment Loads Over Time



Sediment Loads Over Time



Focus of Existing and Future BMP Plan

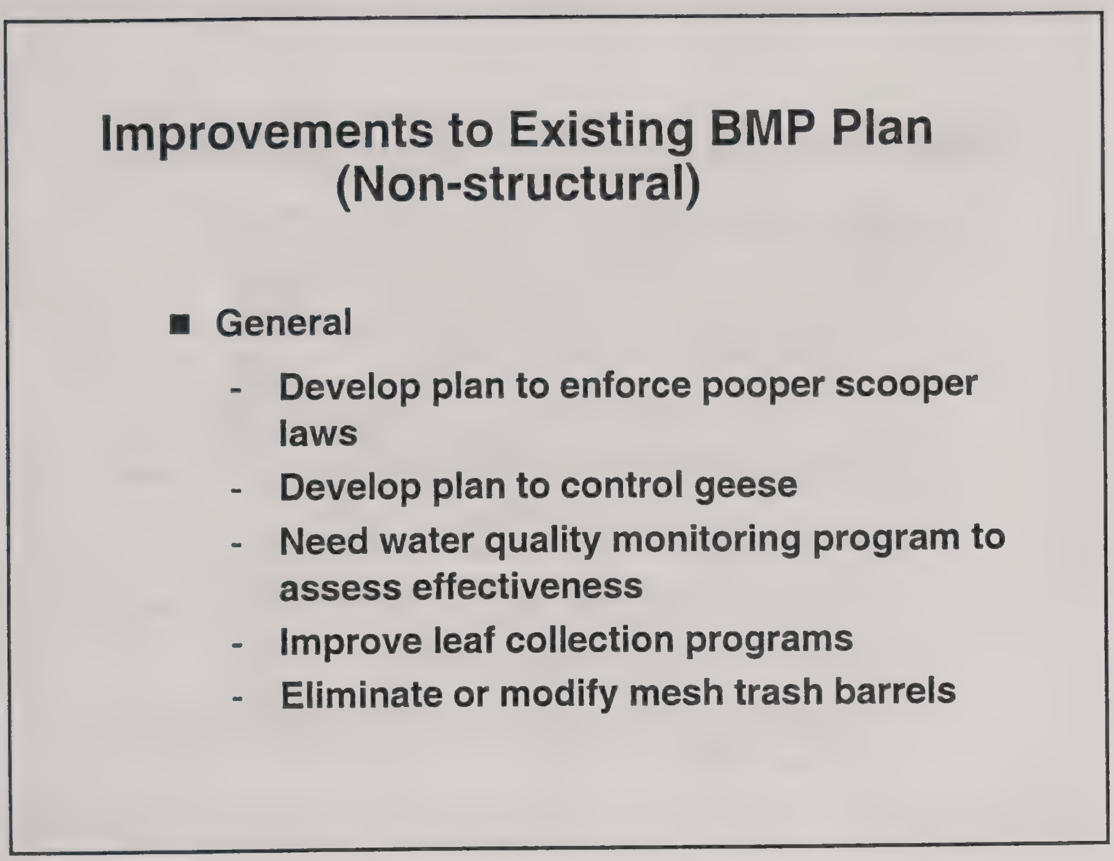
- Several sources contribute the most sediment
  - erosion of banks, pathways, uplands
  - street sanding
  - decayed leaves and brush
- Three watersheds dominate the water system
  - Village Brook
  - Tannery Brook
  - Direct drainage to Muddy River

Hierarchy For Selecting BMP Measures

- 1. Non-structural measures
  - Catch basin cleaning/bank stabilization/etc.
  - Attack the largest sources basinwide!
- 2. Structural measures
  - Sedimentation basins/particle separators
  - Small subwatersheds affected
- 3. Measures to minimize runoff
  - Green roofs/swales/etc.
  - Specific buildings/lots affected

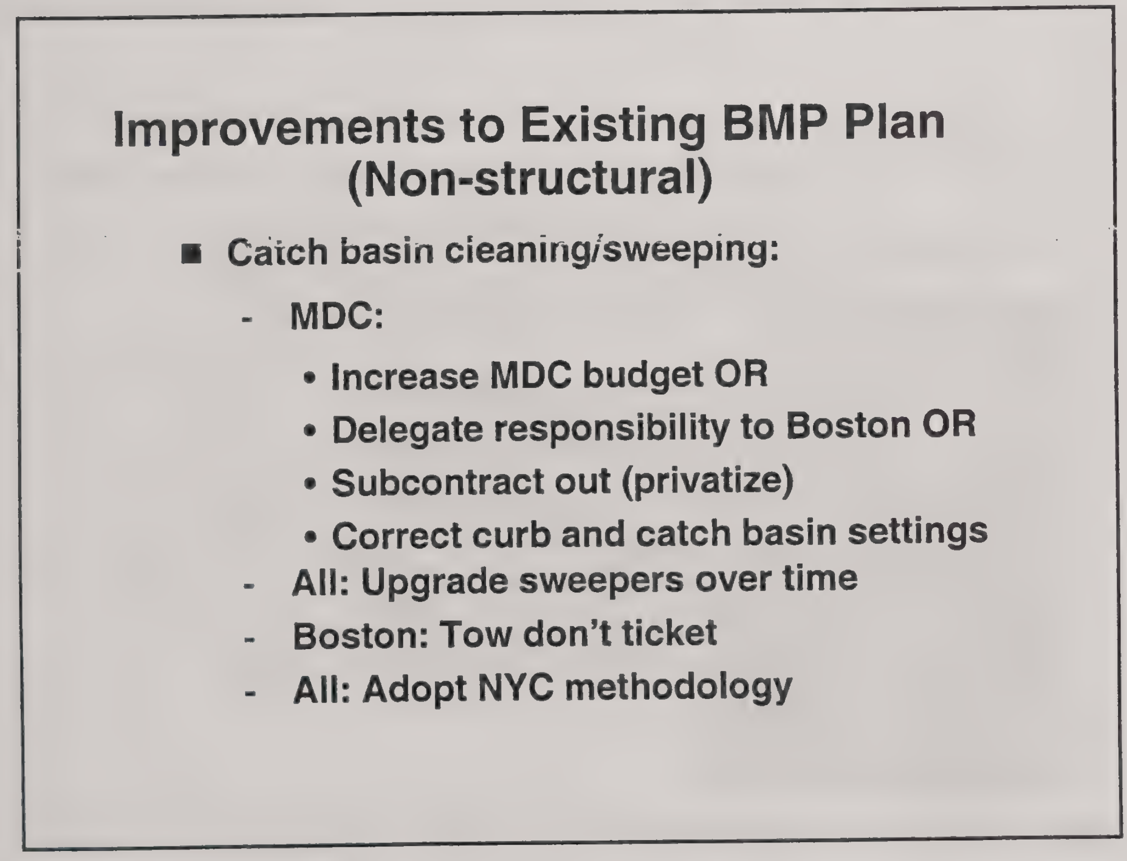
Improvements to Existing BMP Plan (Non-structural)

- Maintain restored banks, pathways and uplands (BPRD & Brookline)
- Address private ways (Brookline)
- Correct “desire lines” (BPRD & Brookline)
  - Behind MFA/Agassiz Road
  - Near Fens Bridge
  - Riverway at Longwood
- Local stormwater regulations (Brookline)



Improvements to Existing BMP Plan (Non-structural)

- General
  - Develop plan to enforce pooper scooper laws
  - Develop plan to control geese
  - Need water quality monitoring program to assess effectiveness
  - Improve leaf collection programs
  - Eliminate or modify mesh trash barrels



Improvements to Existing BMP Plan (Non-structural)

- Catch basin cleaning/sweeping:
  - MDC:
    - Increase MDC budget OR
    - Delegate responsibility to Boston OR
    - Subcontract out (privatize)
    - Correct curb and catch basin settings
  - All: Upgrade sweepers over time
  - Boston: Tow don't ticket
  - All: Adopt NYC methodology

New York City Catch Basin Program

- Data Suggested:
  - Inspected every 2.4 years
  - Cleaned every 3.1 years
  - Grit accumulation: 9” to 30” per year
  - Requiring cleaning 1.4 years to 4.7 years
- Evaluation concluded:
  - NO additions to labor & equipment needed
  - Track and prioritize
  - Sweep commercial/dense residential more frequently

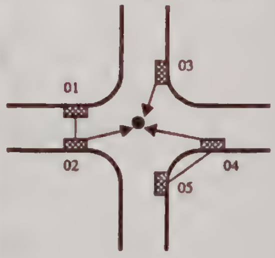
Endorse Boston/Brookline/MDC Adopting NYC Methodology

FIELD ACTIVITIES

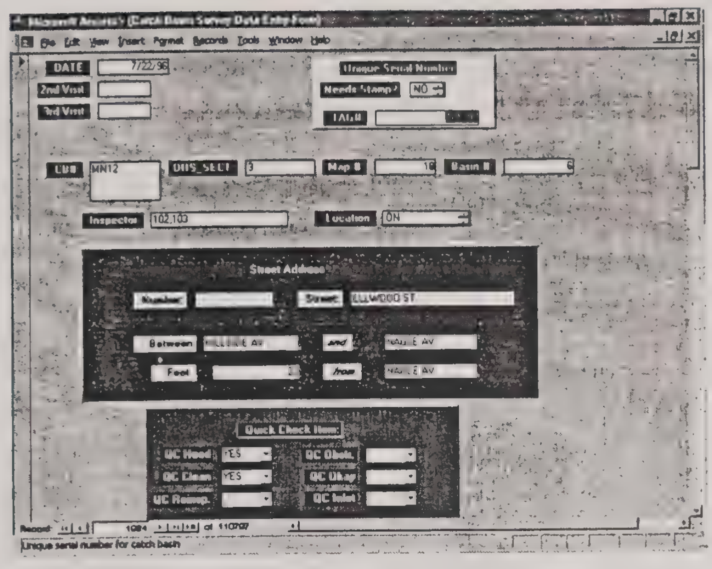
Inspection

Tagging

Mapping



DATA ENTRY FORM


Microsoft Access - [Catch Basin Survey Data Entry Form]
File Edit View Insert Format Records Tools Window Help

DATE 7/22/96

2nd Visit

3rd Visit

Unique Serial Number

Needs Stamp? NO

TAG#

CB# MN12

DOS_SECT 3

Map # 18

Basin # 6

Inspector 102.103

Location ON

Street Address

Number

Street ELLWOOD ST

Between [illegible] and NAGLE AV

Feet 2 from NAGLE AV

Quick Check Item:

QC Hood YES

QC Clean YES

QC Reamp.

QC Obstr.

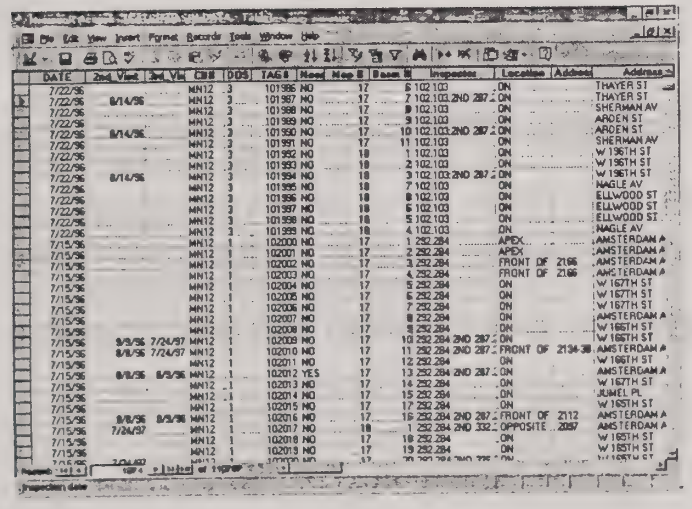
QC Okay

QC Inlet

Record: 1094 of 110707

Unique serial number for catch basin

MS ACCESS DATABASE



DATE	2nd Visit	3rd Vi	CB#	DOS	TAG#	Need	Map #	Basin #	Inspector	Location	Address	Address
7/22/96			MN12	3	101986	NO	17	6	102.103	ON		THAYER ST
7/22/96	8/14/96		MN12	3	101987	NO	17	7	102.103,2ND 287	ON		THAYER ST
7/22/96			MN12	3	101988	NO	17	8	102.103	ON		SHERMAN AV
7/22/96			MN12	3	101989	NO	17	9	102.103	ON		ARDEN ST
7/22/96	8/14/96		MN12	3	101990	NO	17	10	102.103,2ND 287	ON		ARDEN ST
7/22/96			MN12	3	101991	NO	17	11	102.103	ON		SHERMAN AV
7/22/96			MN12	3	101992	NO	18	1	102.103	ON		W 196TH ST
7/22/96			MN12	3	101993	NO	18	2	102.103	ON		W 196TH ST
7/22/96	8/14/96		MN12	3	101994	NO	18	3	102.103,2ND 287	ON		W 196TH ST
7/22/96			MN12	3	101995	NO	18	7	102.103	ON		NAGLE AV
7/22/96			MN12	3	101996	NO	18	8	102.103	ON		ELLWOOD ST
7/22/96			MN12	3	101997	NO	18	6	102.103	ON		ELLWOOD ST
7/22/96			MN12	3	101998	NO	18	5	102.103	ON		ELLWOOD ST
7/22/96			MN12	3	101999	NO	18	4	102.103	ON		NAGLE AV
7/15/96			MN12	1	102000	NO	17	1	292.284	APEX		AMSTERDAM A
7/15/96			MN12	1	102001	NO	17	2	292.284	APEX		AMSTERDAM A
7/15/96			MN12	1	102002	NO	17	3	292.284	FRONT OF	2166	AMSTERDAM A
7/15/96			MN12	1	102003	NO	17	4	292.284	FRONT OF	2166	AMSTERDAM A
7/15/96			MN12	1	102004	NO	17	5	292.284	ON		W 167TH ST
7/15/96			MN12	1	102005	NO	17	6	292.284	ON		W 167TH ST
7/15/96			MN12	1	102006	NO	17	7	292.284	ON		W 167TH ST
7/15/96			MN12	1	102007	NO	17	8	292.284	ON		AMSTERDAM A
7/15/96			MN12	1	102008	NO	17	9	292.284	ON		W 166TH ST
7/15/96	9/9/96	7/24/97	MN12	1	102009	NO	17	10	292.284 2ND 287	ON		W 166TH ST
7/15/96	8/8/96	7/24/97	MN12	1	102010	NO	17	11	292.284 2ND 287	FRONT OF	2134-38	AMSTERDAM A
7/15/96			MN12	1	102011	NO	17	12	292.284	ON		W 166TH ST
7/15/96	8/8/96	8/9/96	MN12	1	102012	YES	17	13	292.284 2ND 287	ON		AMSTERDAM A
7/15/96			MN12	1	102013	NO	17	14	292.284	ON		W 167TH ST
7/15/96			MN12	1	102014	NO	17	15	292.284	ON		JUMEL PL
7/15/96			MN12	1	102015	NO	17	17	292.284	ON		W 165TH ST
7/15/96	8/8/96	8/9/96	MN12	1	102016	NO	17	16	292.284 2ND 287	FRONT OF	2112	AMSTERDAM A
7/15/96	7/24/97		MN12	1	102017	NO	18	1	292.284 2ND 332	OPPOSITE	2097	AMSTERDAM A
7/15/96			MN12	1	102018	NO	17	18	292.284	ON		W 165TH ST
7/15/96			MN12	1	102019	NO	17	19	292.284	ON		W 165TH ST

Record: 1094 of 110707

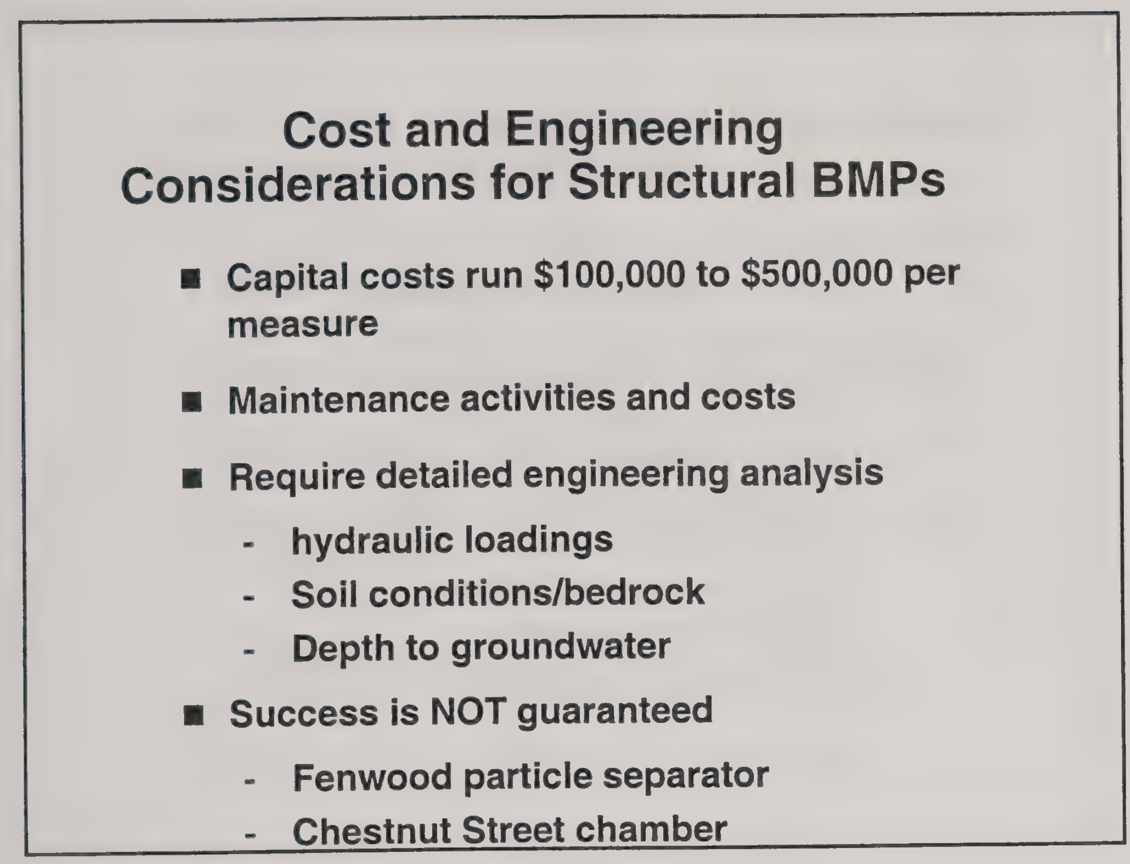
Inspection date

Structural BMP Measures

- Watershed considerations
- Engineering and cost considerations

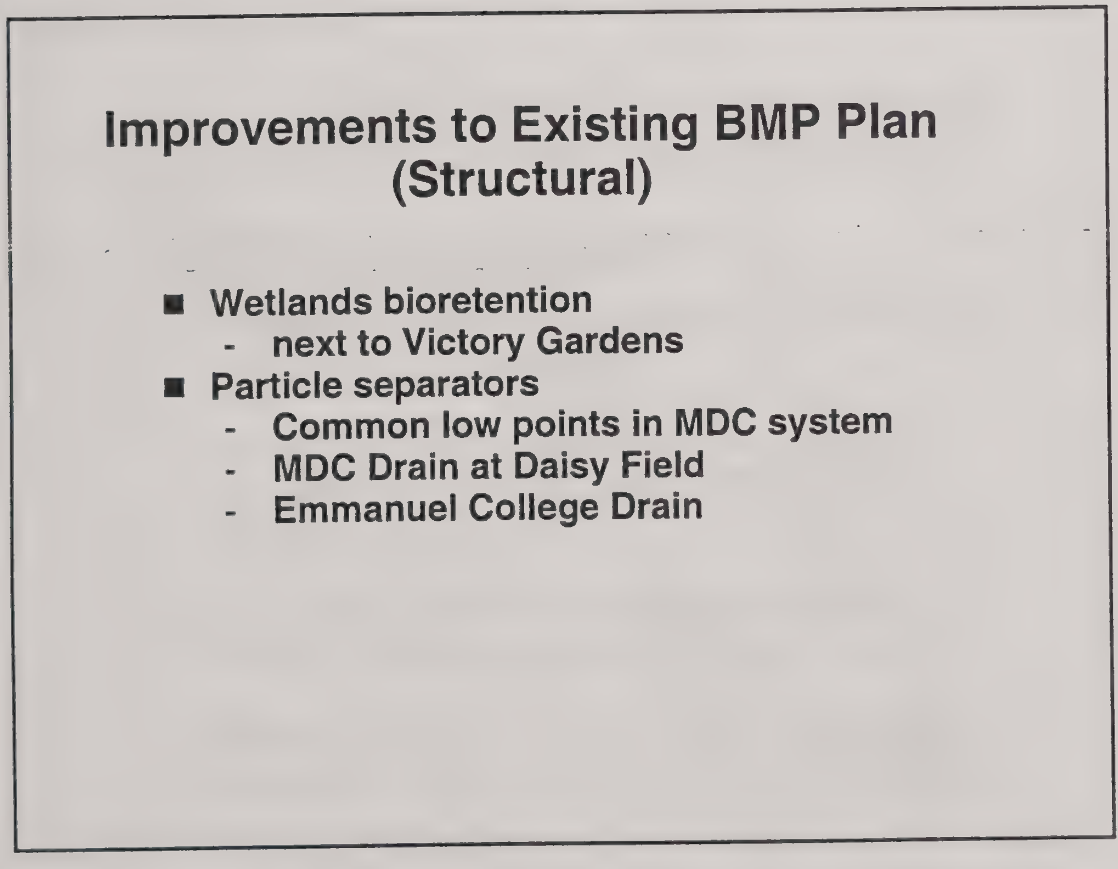
Watershed Characteristics and Structural BMP Compatibility

- 44% percent impervious
- Little non-utilized open space (urbanized)
- Historic park setting for end of pipe controls versus controls upstream in watershed
- Excess storm runoff: 170 million gallons



Cost and Engineering Considerations for Structural BMPs

- Capital costs run $100,000 to $500,000 per measure
- Maintenance activities and costs
- Require detailed engineering analysis
  - hydraulic loadings
  - Soil conditions/bedrock
  - Depth to groundwater
- Success is NOT guaranteed
  - Fenwood particle separator
  - Chestnut Street chamber



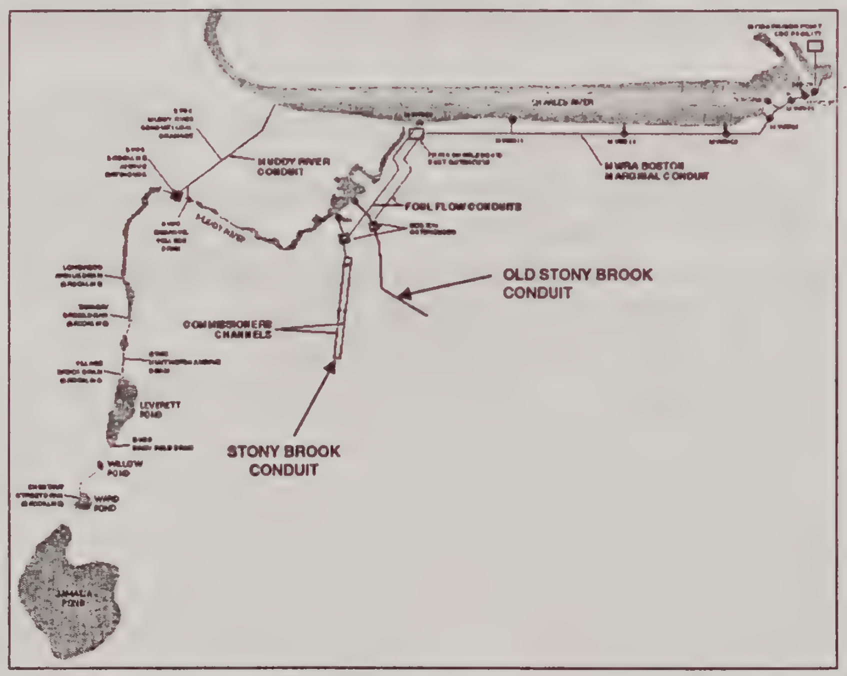
Improvements to Existing BMP Plan (Structural)

- Wetlands bioretention
  - next to Victory Gardens
- Particle separators
  - Common low points in MDC system
  - MDC Drain at Daisy Field
  - Emmanuel College Drain

Improvements to Existing BMP Plan (Structural)

- Storm*ceptor* at Walnut Street
- In-stream Sedimentation basins
  - At Stony Brook outlet
  - At Fens Bridge
  - Riverway at Back Bay Yard
  - Netherlands Road at Longwood Drain
  - Downstream of Tannery Brook
  - Village Brook drain
  - Willow Pond/Chestnut Street Drain

Schematic of the Muddy River



Available Funding Sources

- Nonpoint Source Implementation Grants (EPA 319 Program)--$75K to $300K
- Clean Water State Revolving Fund (MADEP)
- Water Quality Cooperative Agreements (EPA)
- Research and Demonstration Grant Program (MADEP)
- Flood Hazard Mitigation and Riverine Ecosystem Restoration Program (ACE)
- UEI Community Grants Program (EPA)

Examples of Demonstration Projects

- Spragues Cove Constructed Wetland System, Marion, MA (319 Grant)
- Buttermilk Bay Comprehensive Stormwater Remediation Project, Bourne and Wareham, MA (319 Grant)
- Broad Marsh River Stormwater Remediation Project, Wareham, MA (319 Grant)
- BWSC project to evaluate effectiveness of standard catch basin No. 5 to capture solids

Other Innovations

- stormwater utility
- “green roofs”
- roof drain disconnection
- private property issues

EIR Monitoring and Management Plan

- Measures To Be Improved
- New Measures To Be Added
- Communication Plan
  - roles and responsibilities
- Monitoring requirements
- Budgets (Capital and O & M)
- Distribution of costs

- **Questions and Discussion**

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – October 30, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II Follow-up: Planning for Public Meeting (November 8, 2000)
Fran Beatty, A.L.S.A, Senior Landscape Architect for Historic Parks
Boston Parks and Recreation Department

III Presentation: Best Management Practices
David C. Noonan, P.E., Vice President
Camp Dresser & McKee Inc.

Q&A/Discussion with CAC

IV Questions and Answers (General Public) Wrap Up

Summary

I Welcome, Opening Remarks & Comments Received

John Burckardt informed the CAC that the notices for the November 8 public meeting have been distributed and are available for CAC members if they would like to distribute notices themselves.

Mr. Burckardt reported that a CAC member suggested a summary of the Hardy Pond dredging project be shown at the public meeting. The CAC member was concerned that if there are contaminated sediments, would not the water removed from these sediments also be contaminated and, therefore, could not be returned to the river?

In response, Bruce Conklin explained that dewatered water from the dredging process will be treated and returned to the Muddy River. The treatment process for the dewatered water will consist of a series of settling tanks. A National Pollutant Discharge Elimination System

(NPDES) discharge permit is not required but CDM will incorporate stringent water quality requirements into the contract specifications for the construction contract(s).

Where the sediments are contaminated, CDM's experience is that the contaminants remain with the sediment during dewatering and not in the water. The dewatered water is tested prior to being discharged back into the river. If it meets the criteria, the water will be returned to the river.

A CAC member commented that he visited the Hardy Pond project and observed that the dredging operation is relatively quiet. He spoke with the contractor on site who confirmed the truck volumes that the CDM project team earlier presented to the CAC.

II Follow-up: Planning for Public Meeting (November 8, 2000)

Fran Beatty explained the purpose of the public meeting is to present an overview of the project, summary of alternatives evaluated, and a review of the recommended project. Ms. Beatty said the meeting will be facilitated by Susan Jeghelian. Laura Rome from MEPA will provide an explanation of the environmental review process. The presentation will last approximately one hour with an hour provided for questions and answers. Handouts will include a summary of the MEPA process, the project team presentation and a roster of the CAC.

The Boston Parks and Recreation Department has distributed over 2,000 notices on the meeting but Ms. Beatty does not know how many people will attend the meeting.

III Presentation: Best Management Practices

David Noonan began by stating that this presentation is a follow-up to the first presentation on best management practices (BMP) in May 2000. Mr. Noonan acknowledged the CAC's desire for more detail and substance regarding the identification and evaluation of BMPs.

Mr. Noonan explained that the goal with respect to BMPs is to prevent the re-sedimentation of the river and extend the life cycle benefits of the dredging and other improvements that will be constructed.

A copy of the presentation is included as Attachment 2 to this meeting summary.

Q&A with CAC

Is the MDC catch basin at Netherlands Road typical of MDC basins?

Mr. Noonan responded yes according to the MDC but added that the CDM team has not surveyed all of the MDC's basins along the parkways. Mr. Noonan added that the MDC informed him that the MDC is not responsible for capital improvements to the catch basins.

A CAC member explained that the MDC implemented significant improvements to the parkways in 1982 and in fact the MDC owns and is responsible for the maintenance of catch basins on MDC roadways.

Another CAC member suggested that the MDC should identify all catch basin and other environmental improvements that are required so the Massachusetts Environmental Collaborative can include them in their annual "green budget" they present to the Governor and Legislature.

In response to presentation graph that shows sediment loads over time, a CAC member asked if naturally occurring sediment is really represented by a fixed line as shown on the graph.

Mr. Noonan said that, in reality, naturally occurring sediment cannot be controlled and that graphically it is probably not a straight line. Mr. Noonan added that when invasive species are removed, the level of naturally occurring sediment is likely to decrease.

In response to earlier questions, Mr. Noonan explained the concept of green roofs. Green roofs are more common in Europe, and Chicago is seeing more of these as well.

A CAC member commented that landscape design can significantly facilitate the implementation of BMPs and reduce re-sedimentation rates. Landscape design can shape bank, pathway and upland maintenance needs.

How can landscape design address bank scouring that results in periods of high flow?

Mr. Noonan said the project team has modeled river velocity to identify where scour and sedimentation occur. Bruce Conklin added that Marion Pressley is reviewing this issue and is considering using gabion as a base with plantings on top. Mr. Conklin added that there is not much that can be done to protect banks during large storms so the project team is focusing on wetlands plant massing to protect banks during more frequent, smaller storms.

How will the project team correct desire lines?

Mr. Noonan deferred a response and said that Marion Pressley, who was not in attendance, could better respond to this question. Mr. Noonan added that plantings could be used to correct desire lines.

Was the Muddy River ever a source of drinking water?

Mr. Noonan responded no, Jamaica Pond was once a source of drinking water, however.

CAC members asked about domestic pets, specifically a separate area for dog owners to bring their dogs as a way to control fecal bacteria from getting into the river via overland stormwater flows.

Mr. Noonan responded that the project team will examine the feasibility and any potential benefits of having a separate area for dog owners to take their dogs.

A CAC member commented that in Brookline, the town has set up separate dog walking areas and provides barrels and bags to properly dispose of pet waste.

A CAC member commented that the BMP measures outlined by Mr. Noonan involve the need for public education. In the Fenway, where there is a higher turnover of residents, the need for ongoing public education is imperative.

CAC members asked the project team to closely examine the street sanding and salting practices of Boston, Brookline and the MDC. They also requested the team to identify the quantity of material that is deposited on the streets and if there is a better application method that can reduce the amount of material deposited on the roads. CAC members further asked to look at what incentives or disincentives exist for the private contractors who sand and plow Boston's streets.

Mr. Noonan explained that for Boston, Brookline and the MDC, the project team is trying to identify the street sanding and salting practices and quantify the amount of material that is deposited in the watershed on an annual basis. He added that there is likely insufficient data and records to respond to many of the questions that CAC members raised regarding the salt and sand application practices.

Several CAC members also commented on the need to obtain accurate information about the street sweeping activities of Boston, Brookline and the MDC. Some CAC members believe that Boston does not have a functioning street sweeping program for the Fenway.

CAC members also commented on the need to focus attention on the salting and sanding practices in particular on the parkways owned by the MDC since it appears that salt and sand applied to the parkways eventually nearly all of it ends up in the Muddy River. Some CAC members expressed concern over the MDC's ability to clean and maintain the catch basins on the parkways given the insufficient staff and operating and maintenance budget for these activities.

A CAC member asked the project team to look at coordination between the multiple jurisdictional entities along the Muddy River in terms of how best to implement maintenance programs.

Mr. Conklin responded as the project consultant, the CDM team could recommend any coordination efforts that may be needed but it is up to the public entities to implement maintenance programs.

Betsy Shure Gross from the Executive Office of Environmental Affairs (EOEA) referenced the Memorandum of Agreement among the participating agencies, which was executed as a condition of this project. She explained how the participating entities agreed and committed to implementing all maintenance activities that are incorporated into the long-term maintenance program that is developed for this project.

A CAC member commented that funding required for implementation of the BMPs could be generated from either new sources of funds or from cost savings achieved through efficiency gains.

A CAC member asked what structural BMP measures are being considered to reduce re-sedimentation in Leverett Pond?

Mr. Noonan stated that the project consultant team reviewed the Center for Watershed Protection's (CWP) report to the Town of Brookline on BMP measures that could be implemented in the watershed. The CDM team has found that many of the measures presented in the CWP report are not feasible and are not carried forward in the Draft Environmental Impact Report (DEIR). Mr. Noonan added that there are institutional issues (i.e. agency responsibility and coordination) that have to be addressed as part of implementation of all BMP measures. For some measures, the agency that will be responsible for implementation has yet to be clarified. However, the DEIR will identify the agency responsible for each measure in the maintenance and management plan.

How will we insure that what BMP measures are recommended actually get built?

Mark Smith, Executive Office of Environmental Affairs, responded that in the Final EIR, the maintenance and management plan will recommend specific processes for implementation and enforcement of such measures.

Some CAC members commented that they would have liked to have seen a list of specific BMP measures for specific areas of the river?

Mr. Noonan reported that specific measures for appropriate locations will be presented in the Draft Environmental Impact Report.

V Questions and Answers (General Public) Wrap Up

One person commented that the universities should be enlisted to assist with long-term monitoring and assessment of BMP measures.

Kathy Baskin, from the Charles River Watershed Association, emphasized the importance of coordination of operation and maintenance activities as prescribed in the MOU. Ms. Baskin added that some funding sources for BMP measures, such as the Section 319 grant program under the Clean Water Act, are not available for Boston and will not be available for Brookline once they receive their Phase II stormwater permit from EPA. She recommended that the project not depend on a Section 319 grant for BMP implementation.

Other CAC members commented that the Operations and Maintenance Plan needs to detail the assurances and provisions that will be enacted to insure that the recommended BMP projects will be implemented regardless of who or which public agency pays for each project.

Based on the lengthy discussion with the CAC and the general public, a copy of the Memorandum of Understanding between the public agencies is attached. The title of the document reads:

Memorandum of Understanding
By and Among
The Executive Office of Environmental Affairs
The Department of Environmental Management
The Massachusetts Emergency Management Agency
The Boston Water and Sewer Commission
The Town of Brookline and the City of Boston
Concerning the Responsibilities for Funding and Administering
The Muddy River Restoration Project
In the City of Boston and the Town of Brookline

Next Meeting

A Public Information Meeting on the Muddy River Restoration Project is scheduled for Wednesday, November 8, 2000 from 6:00 PM – 8:30 PM at the Egan Engineering/Science Research Center, Raytheon Amphitheater, Room 240 at Northeastern University.

The purpose of the meeting is to provide the general public with an update and summary of the project.

The next meeting of the Emerald Necklace CAC Meeting is scheduled for Wednesday, November 15, 2000. The meeting will be held in the Faculty Club, Northeastern University, Kerr Hall, 96 The Fenway from 6:00 PM – 8:30 PM. The meeting will focus on a presentation on project mitigation measures.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – CDM Consultant Team Presentation
Attachment 3 – Interagency MOU

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

October 30, 2000

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Bimbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	Frances Allon Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Emerald Necklace Citizens Advisory Committee

Meeting

October 30, 2000

Sign-In S

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	A A Levee
John A.	Martin	Emerald Necklace Conservancy	John A Martin
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	Paul Mentag
Mary Crain	Penniman	Charles River Watershed Association	Mary Crain Penni
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Emerald Necklace Citizens Advisory Committee

Meeting

October 30, 2000

Sign-In Sheet

\\parkarnal\bospark\Muddy\CAC Meetings\CAC-12 Oct 30, 2000\[CAC Sign-In Oct_30_2000.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Susan Jeghelian	MODR	727-2224 x 21174	
Bob McDonnell	N.U.	373-5330	r.mcdonnell@neu.edu
Jan Henderson	MASCO	632-2762	jhenderson@masco.harvard.edu
Mark P. Smith	EOEA	626-1050	mark.p.smith@state.ma.us
Betsy Shure Gross	EOEA	626-1117	betsy.shuregross at state.ma.us
Erin Chute	Brookline Conservation	730-2088	erin_chute@town.brookline.ma.us
ED [illegible]	[illegible]	536-1639	
Tim Famulare	Boston Environment	635-3850	Timothy.Famulare@ci.boston.ma.us
Mark Swartz	National Park Service Olmsted NHS	566-1689	Mark_Swartz ~~Mark_Swartz~~@nps.gov
Kathy Baskin	Charles River Watershed Ass	965-5975 x228	kbaskin@crwa.org
JAY CORTELL	CORTELL	781-890-3737X111	cortell@cortell.com
John Burckardt	PB & Boston Parks	617-635-4505x6517	jburckardt@ci.boston.ma.us
Fran Beatty	Boston Parks	" X6570	fbeatty@ci.boston.ma.us
Amy Schofield	Boston Water & Sewer	(617) 737-6344	Schofieldam@bwsc.org
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Alton L Noyes	Cortell	781-890-3737 x128	Cortell@Cortell.com
Ginger Hartman	CDM	617-452-6361	hartmangl@cdm.com

Emerald Necklace
Environmental Improvements Master Plan
And
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

Riverway – Boston Park System Muddy River Improvement. View upstream from the Longwood Avenue Bridge in 1920, twenty-eight years after construction. (Thomas Ellison, photographer, Fredrick Law Olmsted National Historic Site)

Public Meeting

Wednesday, November 8, 2000
6:00 to 8:30 PM

Northeastern University
Egan Engineering /Science Research Center
Raytheon Amphitheater — Room 240
Forsyth Street (next to Ruggles Station)
See map on back

Muddy River Restoration Project

A joint project of:

City of Boston
Thomas M. Menino, Mayor
Justine M. Liff, Commissioner of Parks

Town of Brookline
Joseph Geller, Chair, Board of Selectmen
Thomas DeMaio, Commissioner of Public Works

Project Summary

The Muddy River floods at times causing damage to residents, businesses and institutions in Boston and Brookline. Recent flooding has brought an urgency to the need to restore the river and to bring the resources needed to take action. The Muddy River restoration is an effort to undo the effects of erosion, storm damage, pollution from urban runoff and the loss of Olmsted's landscape scenery, as well as provide for necessary flood control.

(O V E R)

The Muddy River Restoration Project is a joint project of the City of Boston and the Town of Brookline in cooperation with the Commonwealth of Massachusetts. The objectives of the Muddy River Restoration Project are:

- ✓ Improvement of flood control
- ✓ Improvement of water quality
- ✓ Enhance aquatic/riparian habitat
- ✓ Treatment of landscape and historic resources
- ✓ Implementation of Best Management Practices (BMPs)

The Project Limits extend from Wards Pond to the Charles River and includes portions of the City of Boston and the Town of Brookline. The Muddy River Restoration Project includes the preparation of an Environmental Impact Report (EIR), permits, preparation of construction documents, public processes and other work related to the stated objectives.

Funding and support from the Massachusetts Executive Office of Environmental Affairs, Massachusetts Department of Environmental Management, Massachusetts Emergency Management Agency, Federal Emergency Management Agency, U. S. Department of Housing and Urban Development, the Boston Water & Sewer Commission and the Town of Brookline.

* * *

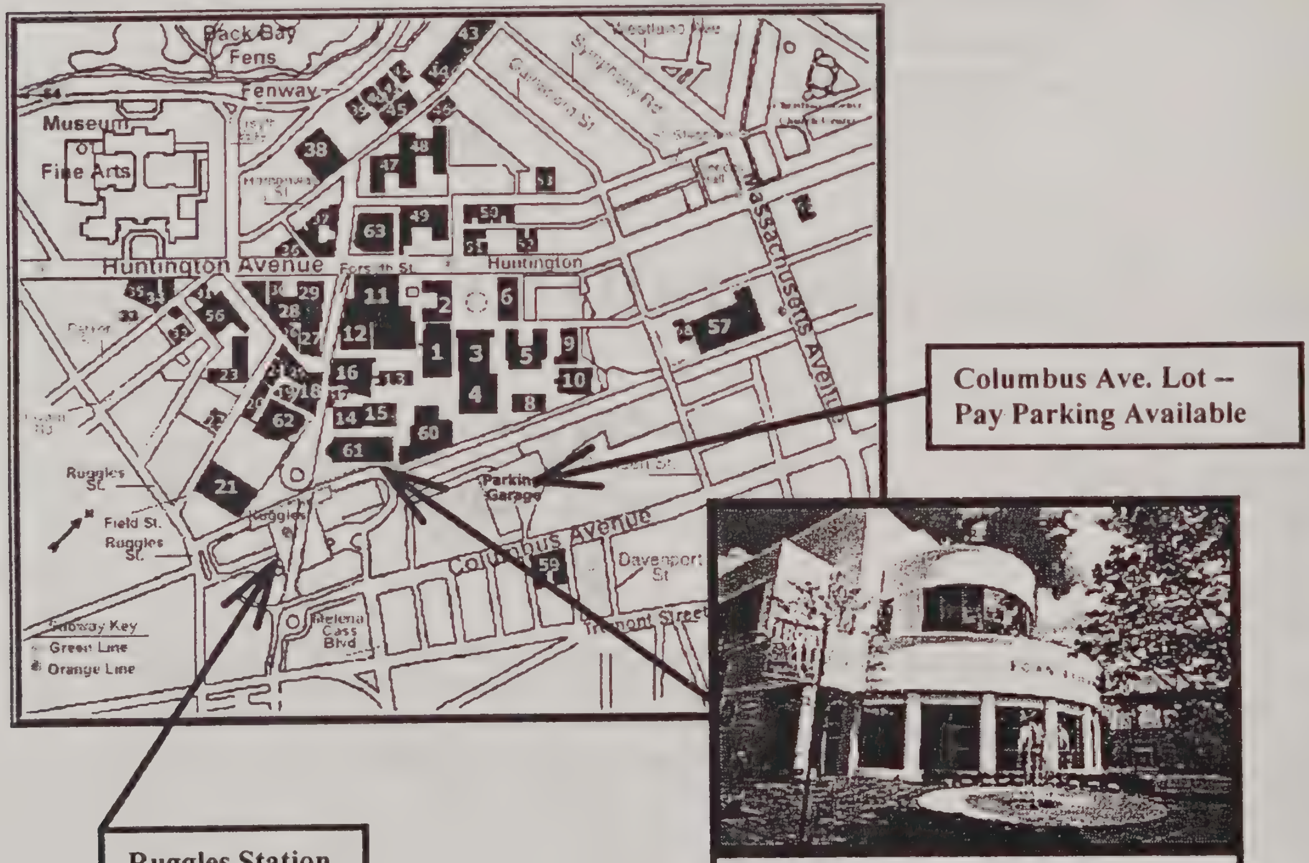
Directions to
Maureen and Richard J. Egan Engineering /Science Research Center
Raytheon Amphitheater -- Room 240
NORTHEASTERN UNIVERSITY CAMPUS

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

By Car:
Pay lot available on Columbus Ave. – see map below.



Columbus Ave. Lot -- Pay Parking Available

Ruggles Station

61 - Maureen and Richard J. Egan Engineering /Science Research Center

Public Information Meeting

Wednesday, November 8, 2000

Emerald Necklace
Environmental Improvements Master Plan
And

Phase I Muddy River Flood Control, Water Quality, Habitat Enhancement and Historic Landscape Rehabilitation

A joint project of:

City of Boston
Thomas M. Menino, Mayor
Justine M. Liff, Commissioner of Parks

Town of Brookline
Joseph Geller, Chair, Board of Selectmen
Thomas DeMaio, Commissioner of Public Works

Funding and support from the Massachusetts Executive Office of Environmental Affairs, the Massachusetts Department of Environmental Management, the Massachusetts Emergency Management Agency, the Federal Emergency Management Agency, the U. S. Department of Housing and Urban Development, the Boston Water & Sewer Commission and the Town of Brookline.

Agenda

I. *Welcome & Opening Remarks* — *6:00 - 6:30*

Susan Jeghelian, *MA Office of Dispute Resolution, Meeting Facilitator*

Fran Beatty, ALSA, *Senior Landscape Architect for Historic Parks*
Boston Parks & Recreation Department

Erin Chute, *Parks and Open Space Director*
Town of Brookline

II. *Overview of Environmental Review Process (Questions & Answers)* — *6:30 - 6:45*

Laura Rome, *MEPA Office*

III. *History of Emerald Necklace* — *6:45 – 6:55*

Marion Pressley, FALSA, *President*
Pressley Associates, Inc.

IV. *Muddy River Restoration Project Overview* — *6:55 – 7:40*

Bruce R. Conklin, PE, *Vice President*
Camp Dresser & McKee Inc.

V. *Questions and Answers* — *7:40 – 8:30*

Emerald Necklace
Environmental Improvements Master Plan
And

Phase I Muddy River Flood Control, Water Quality, Habitat Enhancement and Historic Rehabilitation

Public Information Meeting

November 8, 2000

Ground Rules for Public Participation in the Meeting

Please:

1. Sign the Sign-In Sheet that will be provided.
2. Refer to the Agenda and Handouts to follow the meeting format and presentations.
3. Hold questions until after each presentation.
4. Seek recognition during Q & A by raising hands and waiting to be acknowledged by facilitator.
5. State your name and affiliation (who you represent) before asking your question.
6. Ask only one question. A follow-up question on the same subject is allowed, but please wait to ask a second question until others seeking recognition have had a turn.
7. Stay with the presented topic when asking questions.

EMERALD NECKLACE
ENVIRONMENTAL IMPROVEMENTS MASTER PLAN
AND
PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY,
HABITAT ENHANCEMENT AND HISTORIC LANDSCAPE REHABILITATION

Muddy River Restoration Project

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City of Boston	**Town of Brookline**
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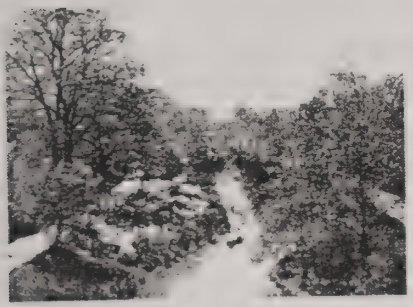
Funding and support from the Massachusetts Executive Office of Environmental Affairs, Massachusetts Department of Environmental Management, Massachusetts Emergency Management Agency, Federal Emergency Management Agency, U. S. Department of Housing and Urban Development, the Boston Water & Sewer Commission and the Town of Brookline.



Riverway – Boston/Brookline Park System Muddy River Improvement. View upstream from the Longwood Avenue Bridge in 1920, twenty-eight years after construction. (Thomas Ellison, photographer, Fredrick Law Olmsted National Historic Site)

MEPA Review Process
November 8, 2000

Overview

1) The **Massachusetts Environmental Policy Act (MEPA)**[1] requires that state agencies study the environmental consequences of their actions (including permitting and financial assistance decisions) and that they take all feasible measures to **avoid or minimize and mitigate damage to the environment.**

2) MEPA further requires that state agencies "use all practicable means and measures to minimize damage to the environment," by **studying alternatives** to the proposed project, and developing **enforceable mitigation commitments** which will become permit conditions for the project if and when it is permitted.

3) **MEPA applies to projects above a certain size that involve some state agency action.** That is, they are either proposed by state agencies or are proposed by municipal, nonprofit, or private parties and require a permit, financial assistance, or land transfer from state agencies. MEPA does not apply to projects needing only local approvals, nor does MEPA serve as an appeal agency for local decisions.

4) MEPA review is not a permitting process. MEPA requires public study, disclosure, and development of feasible mitigation for a proposed project. It does not pass judgement on whether a project is environmentally beneficial, or whether a project can or should receive a particular permit. Those decisions are left to the permitting agencies. **MEPA review occurs before permitting agencies act, to ensure that the permitting agencies know the environmental consequences of their actions.**

5) The Act provides the mechanism through which this information collection and mitigation mandate is executed. The primary mechanism is known as an Environmental Impact Report (EIR). The Act empowers the Secretary of Environmental Affairs to oversee the review process. The process is public and encourages comments from the public and from local and state agencies.

6) The MEPA Office is the staff of the Secretary of Environmental Affairs responsible for day-to-day implementation of the MEPA review process. Its job is to solicit comments from the public and agencies, represent the Secretary at the public consultation sessions on the project, coordinate the project review with the proponent, consultants, and interested agencies and citizens, and make a recommendation to the Secretary regarding the need for (and adequacy of) environmental documentation submitted for a project.

Review Process

The Act establishes standards for review and the basic procedural outlines of that review. The MEPA regulations at 301 CMR 11.00 (available from the Statehouse Bookstore or the MEPA web site: http://www.state.ma.us/mepa) provide the details of the process. The regulations establish thresholds for review, and establish a two-staged review.

1) A proponent whose project exceeds an applicable threshold files an **"Environmental Notification Form"** (ENF) with the MEPA Office. The proponent simultaneously publishes a public notice in a local newspaper and provides copies of the ENF to local and state agencies. Notice of the ENF review is then published by the Secretary in the Environmental Monitor, which is a document that provides notice of all the environmental review documents received by the Secretary during the past half month. (You can get on the mailing list for this free of charge by requesting a subscription in writing from the MEPA Office.)

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[1] Codified as Massachusetts General Law. c30, ss.61-62H, as amended.

2) The publication date shown on the front of the Monitor begins the **30-day review period**. The first 20 days are a public comment period, during which time the Secretary receives comments from the public and agencies, and MEPA staff holds a consultation session. Ten days after the close of the comment period the Secretary determines the need for an EIR. If no EIR is required, state permitting agencies may act on the project.

3) **If an EIR is required, the Secretary issues a document called a "scope"** which identifies what alternatives the proponent must study, what environmental impacts must be analyzed, and what techniques the proponent's analysis should follow. The EIR must contain copies of all comment letters received on the ENF, and a response to each comment.

4) Following the issuance of the scope, the proponent then prepares both a **draft and final EIR**. Notice of the availability of each submittal is published in the Monitor and undergoes a **37-day review period**, the first 30 days of which are a public comment period. Seven days after the close of the comment period, the Secretary issues a determination stating whether the DEIR or FEIR is adequate. In the case of a DEIR, the Secretary also identifies what issues remain for discussion in the FEIR. After an FEIR is found adequate and a legal challenge period has expired, state agencies may act on the project.

5) In this case, the proponent filed its ENF in January 1999, and the **Secretary issued two Certificates** on the project – one setting out the scope for the EIR and one establishing a Special Review Procedure -- on April 29, 1999. The **Special Review Procedure** provision in the MEPA regulations provides the Secretary and proponents with the flexibility to structure alternative procedures for reviewing especially complex projects, for which the typical MEPA review may not be fully appropriate. Significantly, the Special Review Procedure for this project allows Phase I of the project, the Charlesgate portion, to proceed following completion of the review of the DEIR.

6) The Special Review Procedure for this project also called for the establishment of a **Citizens Advisory Committee** (CAC). As the Certificate indicates, the CAC's role is to **advise the Secretary** in his evaluation of the proponent's proposed means and measures to minimize damage to the environment, while achieving the project's goals of flood *control, water quality improvements, and landscape restoration*. The CAC's task is to review proposed activities, comment on the feasibility of different approaches and their likely environmental impacts, and assist the proponent in generating and reviewing alternatives which would avoid or minimize damage to the environment. The CAC is entitled to meet monthly with the proponent and its consultants. The proponents and their consultants will provide information and analysis for the CAC's review and comment, and they and EOEA will ensure that the CAC has the technical information it needs to participate effectively. The MEPA regulations require that the proponent provide the CAC with a preview of each EIR at least 30 days prior to submitting the document to the Secretary. Any comments submitted to the Secretary by the CAC must reflect a consensus of its members (to the degree that they have achieved consensus).

7) Finally, the Special Review Procedure for this project also requires the proponent, following commencement of construction, to file with the MEPA Office and to circulate to all commenters **annual updates** describing progress on the project, including detailing the status of physical improvements and management practices, and summarizing monitoring information.

Schedule of Public Meetings & Opportunities for Public Input

November 8, 2000	Public Meeting: Informational overview of the project
January 25, 2001	Citizens Advisory Committee Meeting: Overview of the Draft Environmental Impact Report (DEIR)
Winter 2001	**Draft Environmental Impact Report (DEIR)** available to public Public Meeting on Draft Environmental Impact Report (date to be determined) **Public comment period** (typically 30 days from release of the DEIR, but this period could be extended). Comment letters should be addressed to the Secretary of Environmental Affairs.
Spring/Summer 2001	Citizens Advisory Committee Meeting(s) Discussion of Final Environmental Impact Report preparation

Typical Repositories for Public Review of the Draft Environmental Impact Report (Preliminary List):

- Boston Public Library (Copley Square)
- Brookline Public Library (Main Branch)
- Boston City Hall
- Brookline Conservation Commission offices
- Executive Office of Environmental Affairs, MEPA Office

Note: Other locations may be added.

Emerald Necklace Citizens Advisory Committee
Membership

Name	Affiliation
Charles Alan Birnbaum	National Park Service
Isabella M. Callanan	Friends of the Muddy River
Suzanne Comtois	c/o Fenway CDC
Christine Cooper	Jamaica Pond Project
Edward Cutler	Brookline Resident
Margaret Dyson	Historic Massachusetts
Frances Allou Gershwin	Mahoney, Hawkes & Goldings
Irene Gillis	ROW Coalition
Alan Goodman	The Abbey Group
George Hagerty	Fenway Studios, Inc.
June Hatfield	Boston GreenSpace Alliance
Richard Heath	
Gary R. Hilderbrand	Douglas Reed Landscape Arch.
Adam Kahn	Brookline Conservation Commission
Frances J. Kemp	Fenway Civic Association, Friends of the Muddy River, Fenway Resident
John Leahy	
Arleyn A. Levee	National Assn. For Olmsted Parks
John A. Martin	Emerald Necklace Conservancy
Hugh Mattison	Friends of Leverett Pond
Lauren Meier	
Paul Mentag	Fenway Alliance
Mary Crain Penniman	Charles River Watershed
Jane Pfister	Brookline Resident
George Proakis	Boston Resident
Marion Sabal	Fenway Garden Society
Roscoe Sandlin	
Joyce Starner	Symphony United Neighbors
Fredericka Veikley	Fenway Civic Association
Eileen Woodford	National Parks & Conservation Association

Emerald Necklace Citizens Advisory Committee
Schedule of Meetings

No.		Date	Topic(s)	Location
1	Wed.	29-Sep-1999	Introductions; slide presentation of park	96 The Fenway, NU Faculty Lounge
2	Tue.	26-Oct-1999	Dr. Charles Beveridge presentation; Master Plans	96 The Fenway, NU Faculty Lounge
3	Mon.	28-Feb-2000	J. Wickersham (MEPA): "Role of CAC" presentation; Introduce consultants; project overview	96 The Fenway, NU Faculty Lounge
4	Thur.	30-Mar-2000	Project Alternative Identification	Egan Center, NU
5	Tue.	16-May-2000	Best Management Practices	96 The Fenway, NU Faculty Lounge
6	Tue.	13-Jun-2000	Habitat/Rare Species	Egan Center, NU
7	Mon.	17-Jul-2000	Historic Resources	450 Dodge Hall, NU
8	Tue.	22-Aug-2000	Staging Areas, Pedestrian & Traffic Issues	Egan Center, NU
9	Tue.	19-Sep-2000	Culvert/Open Channel/Dredge/Disposal, Part 1	450 Dodge Hall
10	Thur.	28-Sep-2000	Culvert/Open Channel/Dredge/Disposal, Part 2	Egan Center, NU
11	Mon.	23-Oct-2000	Alternatives Evaluation	Egan Center, NU
12	Mon.	30-Oct-2000	Alternatives Evaluation, Part 2: BMP Alternatives Analysis	Egan Center, NU
---	Wed.	08-Nov-2000	PUBLIC MEETING	Egan Center, NU
13	Wed.	15-Nov-2000	Mitigation	96 The Fenway, NU Faculty Lounge
14	Mon.	4-Dec-2000	Project Costs	*location to be determined*
15	Thur.	25-Jan-2001	DEIR/EA Presentation	Egan Center, NU

Note: *The order of the topics may be changed or re-arranged, with the concurrence of the CAC.*

GLOSSARY OF TERMS

Aeration is the process of adding air to water. Aquatic life requires dissolved oxygen (DO) in water. If there is insufficient dissolved oxygen in a stream or pond, various methods of aeration could be considered.

Beach is a term used by Fredrick Law Olmsted for a segment of the river or pond bank that is open to visual access to the river. Much of Olmsted's design for the river bank landscape in the Riverway and Olmsted Park varies between dense planting of bushes and shrubs to open vistas of the water and across the water.

Bioretention Swale is a broad, shallow stormwater drainage channel with a dense stand of vegetation covering the side slopes and channel bottom. These swales are designed to trap pollutants, promote infiltration and reduce flow velocities.

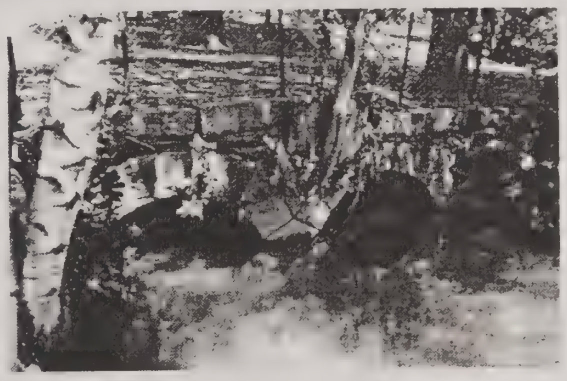
BMP is an abbreviation for **Best Management Practice**. BMPs have been identified by the US EPA and Massachusetts DEP as practices that can improve water quality in storm drainage systems. Some of these are maintenance operations such as frequent street sweeping, cleaning out of catch basins, maintaining vegetative cover, or repairing eroding banks. These practices would be implemented in the parks and throughout the 5.6 square mile watershed of the Muddy River.

Other BMPs are "structural" and involve first constructing something, and then maintaining it. Examples might include "water quality devices" or buried chambers that help settle out the sand and sediments in the storm drain pipe before it discharges into the watercourse. Structural BMPs are often located near the end of the pipe, just before the outlet.

The EPA and DEP have identified wide variety of BMPs. Not all BMPs are appropriate for every situation.

Conductivity – A measure of the ability to pass an electric current in a liquid. This indirectly measures the mineral content in a sample.

Culvert – A pipe or conduit that allows a stream or waterway flow under a roadway, railway, parking area or surface feature. See picture at right.



Daylighting involves the uncovering – and, thereby, exposing to daylight – a section of a waterway that had been put in a pipe or culvert.

Desire Line – In parks, open spaces and campus quadrangles, desire lines can be seen at the worn paths through lawns that do not follow the established paved pathways. They often represent short cuts between two places.

Emerald Necklace is the name given to a string of parks that form an arc of green spaces around the neck of Boston. These parks include Boston Common, the Public Gardens, Commonwealth Avenue Mall, Charlesgate, Back Bay Fens, the Riverway, Olmsted Park, Jamaica Pond, the Arborway, Arnold Arboretum, and Franklin Park.

ENF is an abbreviation for **Environmental Notification Form.** Its submittal is the first step in the environmental review of a project under Massachusetts Environmental Policy Act (MEPA). The ENF requires the project proponent to answer specific questions regarding the likely environmental impacts of the proposed project. The ENF is submitted to the MEPA Office of the Executive Office of Environmental Affairs (EOEA), which determines if the likely impacts are significant to warrant the submission of an Environmental Impact Report (EIR). The public is encouraged to provide written comments. The findings of the Secretary of EOEA are written in the form of a Certificate.

The ENF for the Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement was submitted in January 1999. The Secretary of EOEA issued two (2) certificates:

1. *A Certificate requiring that an EIR be prepared and specifying the scope of the EIR.; and*
2. *A Certificate establishing the Special Review Procedure, which included the establishment of the Citizens Advisory Committee (CAC) and defining its role.*

EIR is an abbreviation for **Environmental Impact Report.** After the Secretary of EOEA determines that an EIR is required, the project proponent prepares the EIR. The EIR is prepared according to the scope outlined in the ENF Certificate and the MEPA Regulations (301 CMR 11.00).

The EIR analyzes the environmental impacts of the project in technical detail. The EIR itself is not a permit, but it allows the regulatory agencies the opportunity to review the details of the project prior to the permit application stage. The EIR also responds to public comments letters regarding the ENF.

The EIR is first submitted to the MEPA Office as a draft (DEIR). A 30-day public comment period follows. The Secretary of EOEA then prepares a Certificate that states whether the DEIR has addressed the scope and environmental impacts adequately. The Certificate provides guidance as to any revisions or additional information is required in the Final EIR (FEIR). The FEIR also responds to public comments letters regarding the DEIR.

The DEIR for the Phase I Muddy River Flood Control, Water Quality, Habitat Enhancement and Historic Landscape Rehabilitation will be prepared over the next year. We would anticipate submission to the MEPA Office in early 2001.

For information about MEPA, visit www.state.ma.us/mepa .

Habitat refers to the environment that an animal species uses for finding food, establishing a dwelling (e.g., nest, den, etc.), protection from natural enemies, raising its young, etc. Habitat may include various plant species, water, and dry land. A diverse environment will supply the habitat for a variety of animal species. The sketch to the right illustrates a diverse habitat.

Historic Shoreline refers to the water's edge that existed at some previous time. For the Emerald Necklace, the historic shoreline generally refers to the outline of the water's edge as designed by Olmsted in Olmsted Park and the Riverway. In the Back Bay Fens, the historic shoreline is a blend of the original Olmsted design (not all of which was actually built) and designs by Shurtleff.

Invasive Species refer to plants that:

- Establish easily
- Grow and proliferate aggressively
- Produce high numbers of offspring
- Disperse over a wide area
- Persist without cultivation
- Threaten biological diversity

In the Emerald Necklace, invasive species include Common Reed (*Phragmites australis*), Purple Loosestrife (*Lythrum salicaria L.*), Japanese Knotweed (*Polygonum cuspidatum Sieb. & Zucc.*), and Buckthorn (*Rhamnus cathartica L.*), among others.

***Phragmites* (common reed) in Back Bay Fens**

Particle Separators are large, underground chambers used to separate out large and mid-sized particles from stormwater. There are one type of structural BMP that can be used to enhance stormwater quality and remove sand, grit, and rubbish. Proper design and frequent inspection/maintenance is key to their performance.

PCBs – Polychlorinated biphenols, a class of chemicals formed by chlorination of the biphenol molecule. Compounds are typically found in oils used in old electric transformers.

Point Source refers to a location that a pipe or ditch discharges into a river, stream, pond or other waterway.

Restoration and Rehabilitation (of historic landscapes): Restoration and Rehabilitation of historic structures and landscapes (such as the Emerald Necklace) have special definitions taken from *A Guide to Cultural Landscape Reports*, Department of the Interior, National Parks Service, p. 82. (The definitions of the four treatment types are also included in *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes).*

> **Restoration:** "the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by removing features from other periods in its history and reconstructing missing features from the restoration period."
>
> **Rehabilitation:** "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values."

RCRA – Resource Conservation Recovery Act, a federal law that defines a hazardous waste and its disposal.

Riparian – refers to land adjacent to a steam, river, pond, lake or other waterway.

Sediment Sampling is the process to taking sample cores of the sediments at the bottom of the river or pond to determine their chemical composition. It is important to determine this prior to dredging or removing these sediments. The samples are sent to a testing laboratory where analyses are performed to determine if certain chemicals are present. Based on the chemical analyses and the applicable regulations (state and federal), a determination can be made as to where to dispose of the sediments that are removed from the river.

Sedimentation Basins are ponds created by excavation or the construction of a dam or barrier. Sedimentation basins primarily serve to detain stormwater runoff to allow excessive sediment to settle out.

Staging Areas – During construction, staging areas are used for the contractor to set up equipment, maintain a field office, and store construction materials.

Swale is a shallow stormwater channel, or small drainage ditch. A swale may be grassed, vegetated, or lined (paved with stone or pavement). See also definition of "Bioretention Swale."

Vegetated Swale is a broad, shallow channel with a dense stand of vegetation covering the side slopes and channel bottom. Vegetated swales are designed to slowly convey storm water runoff and in the process trap pollutants, promote infiltration and reduce flow velocities. Vegetated swales can be either wet or dry. Dry swales are used in areas where standing water is not desired, such as in residential areas. Wet swales can be used where standing water does not create a nuisance problem and where the groundwater level is close enough to the surface to maintain the permanent pool in inter-event periods. Wet swales provide the added benefit of being able to include a range of wetland vegetation to aid in pollutant removal.

Wildlife Habitat – See "Habitat."

ABBREVIATIONS

ACE or ACOE	U.S. Army Corps of Engineers
ANRAD	Abbreviated Notice of Resource Area Delineation
BDPW	Brookline Department of Public Works
BLC	Boston Landmarks Commission
BLSF	Bordering Land Subject to Flooding
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BosConCom	Boston Conservation Commission
BPC	Brookline Preservation Commission
BP&R	Boston Parks & Recreation Department
Brookline P&RD	Brookline Parks & Recreation Department
BPWD	Boston Public Works Department
BRA	Boston Redevelopment Authority
Brookline ConCom	Brookline Conservation Commission
BTD	Boston Transportation Department
BVW	Bordering Vegetated Wetlands
BWSC	Boston Water & Sewer Commission
CAC	Citizens Advisory Committee
cfs	Cubic feet per second
CB	Catch Basin
CDM	Camp Dresser & McKee Inc.
cm	Centimeter
CMR	Code of Massachusetts Regulations
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
COE	U. S Army Corps of Engineers
CS	Combined Sewer
CSO	Combined Sewer Overflow
cy	Cubic yards
DEIR	Draft Environmental Impact Report
DEM	Massachusetts Department of Environmental Management
DEP	Massachusetts Department of Environmental Protection

DO	Dissolved Oxygen
DOI	U. S. Department of the Interior
EA	Environmental Assessment
EDB	Ethlene dibromide
EIA	Effective Impervious Area
EIR	Environmental Impact Report
ENC	Emerald Necklace Conservancy
ENF	Environmental Notification Form
EOEA	Executive Office of Environmental Affairs
EOTC	Executive Office of Transportation and Construction
EPA	U.S. Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
FCA	Fenway Civic Association
FCDC	Fenway Community Development Corporation
FEIR	Final Environmental Impact Report
FEMA	U. S. Federal Emergency Management Agency
FLO	Fredrick Law Olmsted
FOLP	Friends of Leverett Pond
FOMR	Friends of the Muddy River
gpm	Gallons per minute
HHC	Household hazardous chemical
IPM	Integrated Pest Management
Kg	Kilogram
LMA	Longwood Medical Area
LOS	Level of Service
LUW	Land Under Water
MASCO	Medical Academic and Scientific Community Organization, Inc.
MBTA	Massachusetts Bay Transportation Authority
MDC	Metropolitan District Commission
MEMA	Massachusetts Emergency Management Agency
MEPA	Massachusetts Environmental Policy Act
Mg	Milligrams
Mg/kg	Milligrams per kilogram
MHC	Massachusetts Historic Commission

MHD	Massachusetts Highway Department
MIA	Mapped Impervious Area
MNHESP	Mass Natural Heritage and Endangered Species Program
MR	Muddy River
MRC	Muddy River Conduit
MTA	Massachusetts Turnpike Authority
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration of the U. S. Department of Commerce
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NPS	Non-point source
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O&M	Operations and Maintenance
OoC	Order of Conditions
OSDS	On-site disposal systems
PAHs	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PB	Parsons Brinckerhoff
PCBs	Polychlorinated biphenols
PHCs	Petroleum Hydrocarbons
POTW	Publicly Owned Treatment Works
RCRA	Resources Conservation Recovery Act
RDA	Request for Determination of Applicability
ROW	Restore Olmsted's Waterway
SCS	Soils Conservation Service
SOD	Sediment Oxygen Demand
SUN	Symphony United Neighbors
SWPPP	Storm Water Pollution Prevention Plan
TCLP	Toxic Characterization Leaching Procedure
TKN	Total Organic Nitrogen

TN	Total Nitrogen
Total P	Total Phosphorus
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
Umhos/cm	Micro mhos per centimeter
USACE or USACOE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
VOCs	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbons

Camp Dresser & McKee Inc.

Muddy River Restoration Project

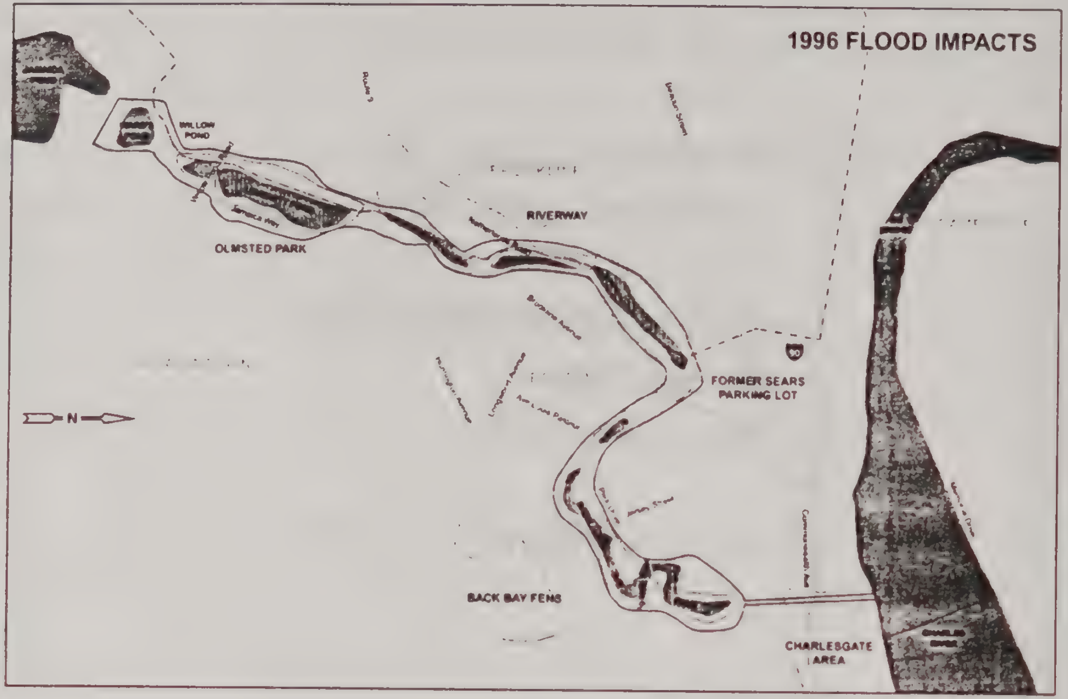
Public Information Meeting

November 8, 2000

Bruce Conklin, PE, CDM

Public Information Meeting Presentation

Emerald Necklace Environmental Master Plan and Phase 1 Muddy River Flood Control, Water Quality, Habitat Enhancement and Historic Rehabilitation

1996 FLOOD IMPACTS
WILLOW POND
Jamaica Way
OLMSTED PARK
RIVERWAY
Brookline Avenue
90
FORMER SEARS PARKING LOT
N
Commonwealth Ave
BACK BAY FENS
CHARLESGATE AREA
CHARLES RIVER

Project Objectives

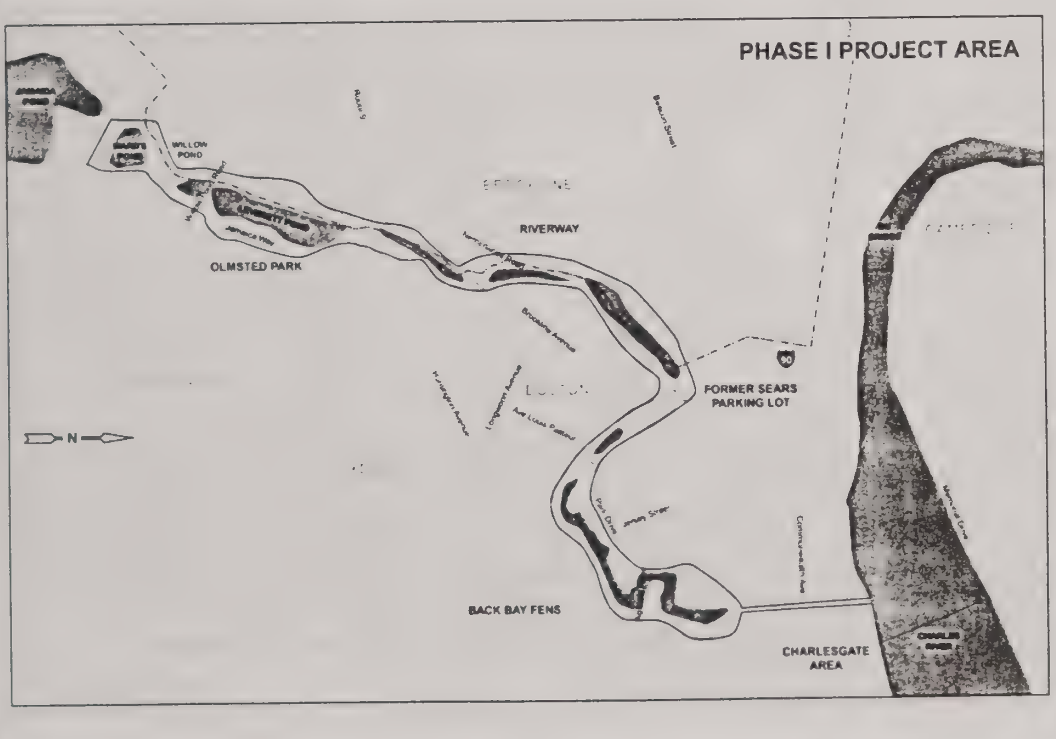
Improve water quality

Provide flood control

Restore landscape and historic resources

Institute Best Management Practices (BMPs) in the Muddy River system

Enhance aquatic/riparian habitat



Project Alternatives (1 of 3)

- Provide flood control
  - Daylighting
  - Culvert Replacement
  - Dredging
  - Flood Protection
  - Upstream Storage
- Improve water quality
  - Dredging
  - Point Source Control
  - Flow Augmentation

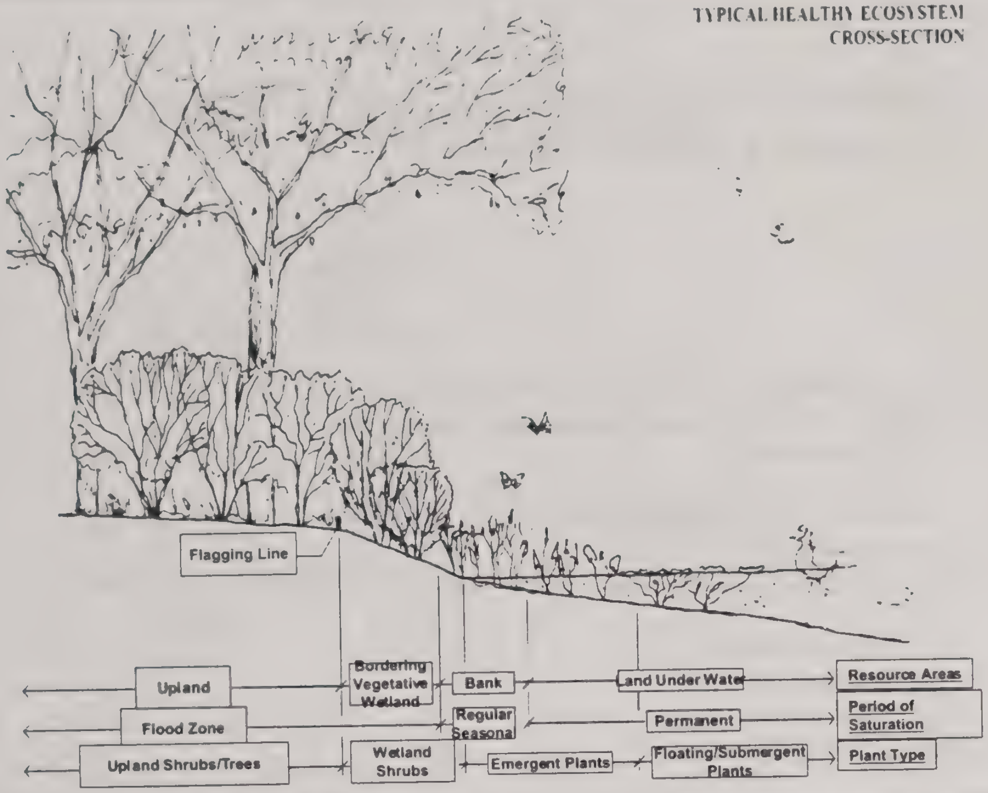
Project Alternatives (2 of 3)

- Improve water quality (con't)
  - Aeration
  - Harvesting of aquatic vegetation
- Enhance aquatic / riparian habitat
  - Same alternatives as water quality plus
  - Best Management Practices
  - Removal of invasive species
  - Planting wetland and riparian vegetation
  - Restore historic islands

Project Alternatives (3 of 3)

- Restore landscape and historic resources
  - Develop treatment plan to respect Emerald Necklace Master Plan, 1990 ("the continuum")
  - Develop treatment plan to respect primary and secondary periods of significance of the Park
- Institute Best Management Practices (BMPs) for stormwater management

TYPICAL HEALTHY ECOSYSTEM CROSS-SECTION



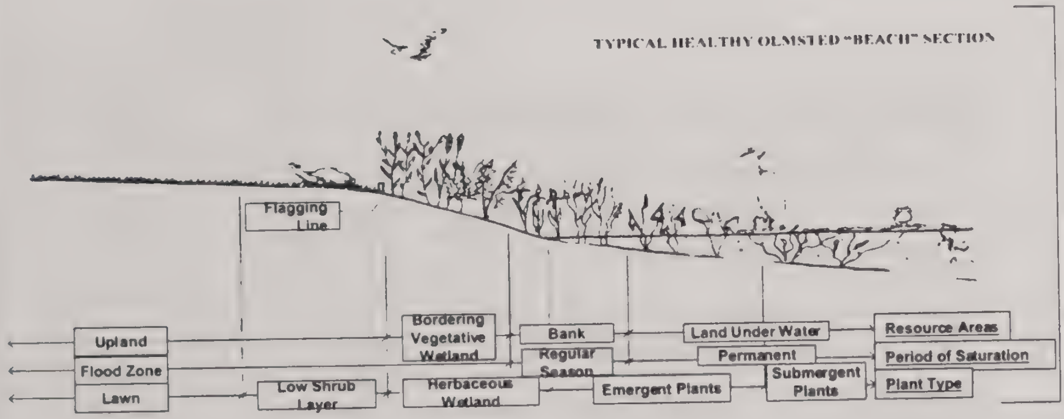
Flagging Line

Upland — Bordering Vegetative Wetland — Bank — Land Under Water — Resource Areas

Flood Zone — Regular Seasonal — Permanent — Period of Saturation

Upland Shrubs/Trees — Wetland Shrubs — Emergent Plants — Floating/Submergent Plants — Plant Type

TYPICAL HEALTHY OLMSTED "BEACH" SECTION

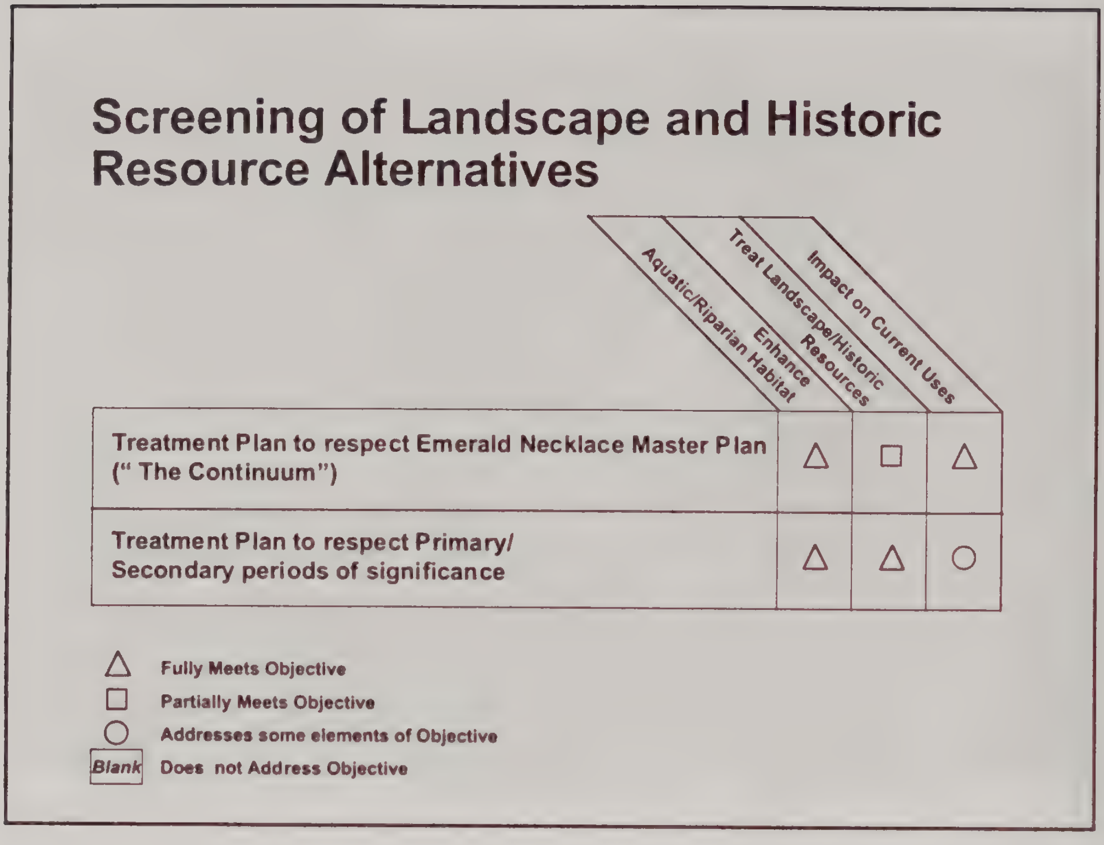


Flagging Line

Upland — Bordering Vegetative Wetland — Bank — Land Under Water — Resource Areas

Flood Zone — Regular Season — Permanent — Period of Saturation

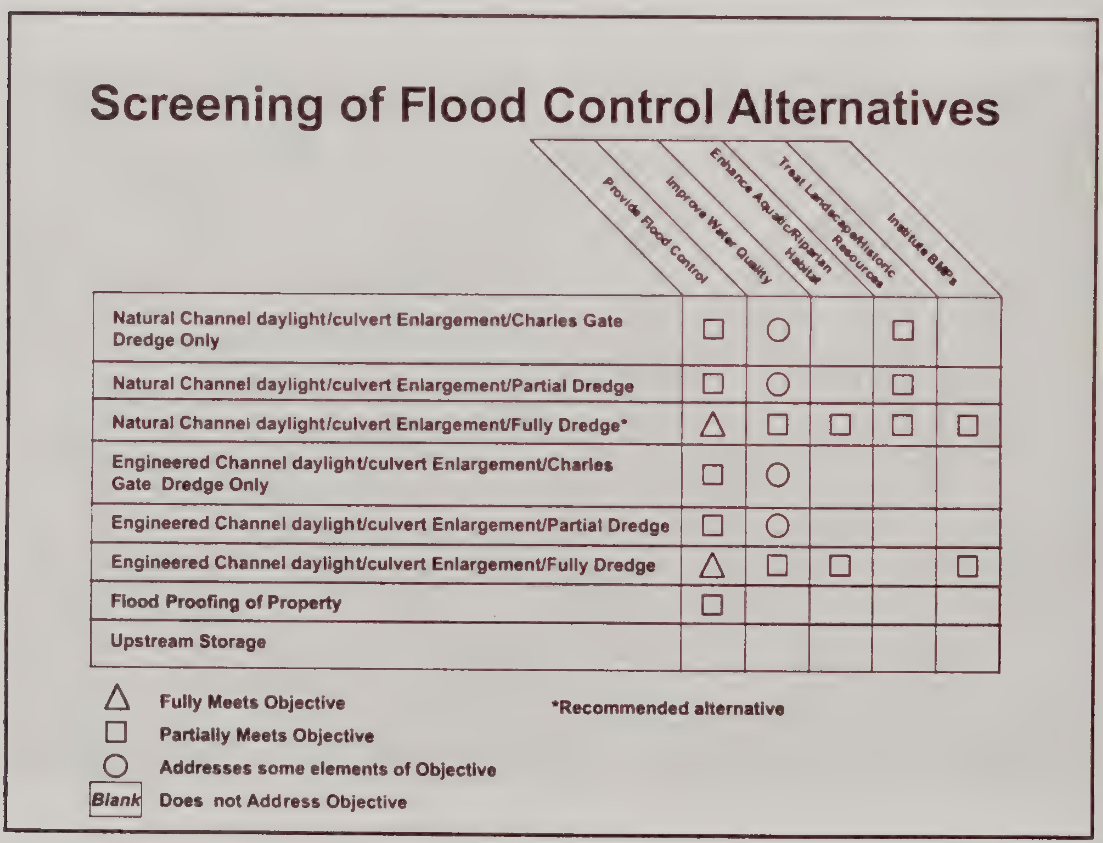
Lawn — Low Shrub Layer — Herbaceous Wetland — Emergent Plants — Submergent Plants — Plant Type



Screening of Landscape and Historic Resource Alternatives

	Enhance Aquatic/Riparian Habitat	Treat Landscape/Historic Resources	Impact on Current Uses
Treatment Plan to respect Emerald Necklace Master Plan (" The Continuum")	△	□	△
Treatment Plan to respect Primary/ Secondary periods of significance	△	△	○

△	Fully Meets Objective
□	Partially Meets Objective
○	Addresses some elements of Objective
Blank	Does not Address Objective



Screening of Flood Control Alternatives

	Provide Flood Control	Improve Water Quality	Enhance Aquatic/Riparian Habitat	Treat Landscape/Historic Resources	Institute BMPs
Natural Channel daylight/culvert Enlargement/Charles Gate Dredge Only	□	○		□	
Natural Channel daylight/culvert Enlargement/Partial Dredge	□	○		□	
Natural Channel daylight/culvert Enlargement/Fully Dredge*	△	□	□	□	□
Engineered Channel daylight/culvert Enlargement/Charles Gate Dredge Only	□	○			
Engineered Channel daylight/culvert Enlargement/Partial Dredge	□	○			
Engineered Channel daylight/culvert Enlargement/Fully Dredge	△	□	□		□
Flood Proofing of Property	□				
Upstream Storage					

△	Fully Meets Objective
□	Partially Meets Objective
○	Addresses some elements of Objective
Blank	Does not Address Objective

*Recommended alternative

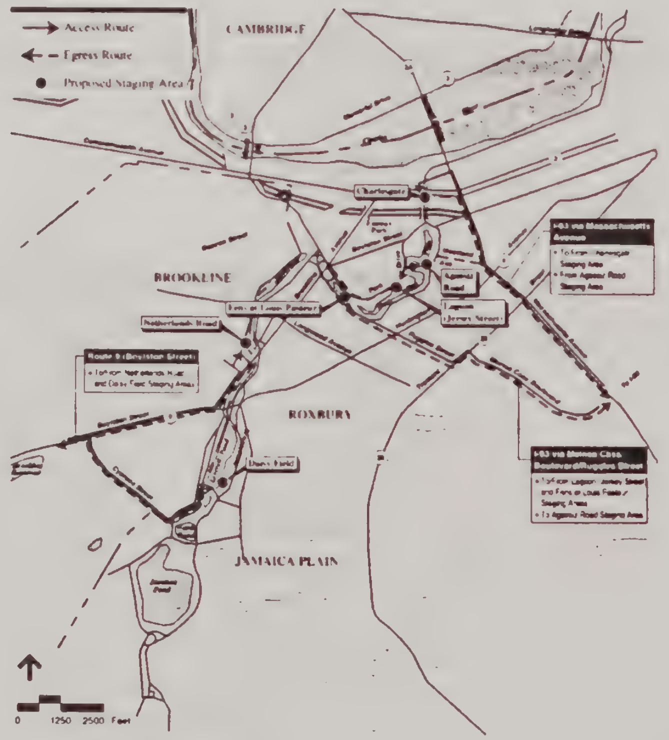
Alternative Dredging Methods

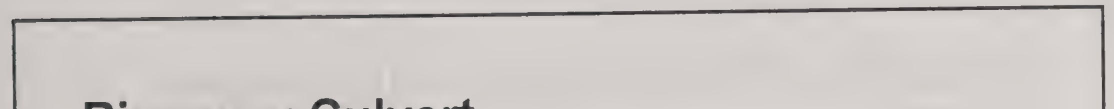
- Dredge in the dry
- Drag line dredging
- Environmental clamshell bucket dredging
- Gradall dredging
- Conventional hydraulic dredging
- High solids hydraulic dredging (Toyo-type pump)

Video clip of Hardy Pond dredging and dewatering

Staging Areas for Hydraulic Dredging

- Charlesgate
- Agassiz Road
- Lagoon (Jersey Street)
- Fens at Louis Pasteur
- Netherlands Road
- Daisy Field


Access Route
Egress Route
Proposed Staging Area
CAMBRIDGE
Charlesgate
BROOKLINE
Agassiz Road
Fens at Louis Pasteur
Lagoon (Jersey Street)
Netherlands Road
I-93 via Massachusetts Avenue
To/from Charlesgate Staging Area
From Agassiz Road Staging Area
Route 9 (Boylston Street)
To/from Netherlands Road and Daisy Field Staging Areas
ROXBURY
Daisy Field
I-93 via Melnea Cass Boulevard/Ruggles Street
To/from Lagoon (Jersey Street) and Fens at Louis Pasteur Staging Areas
To Agassiz Road Staging Area
JAMAICA PLAIN
0 1250 2500 Feet

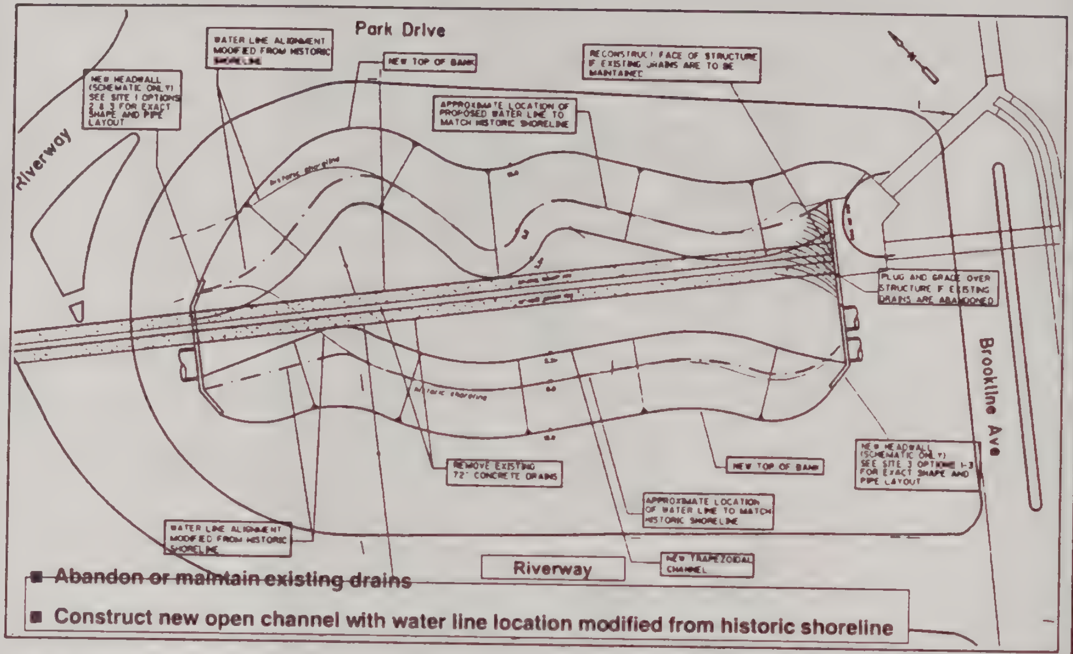


Riverway Culvert

- Maintain existing drains
- Remove structure
- Construct new drain

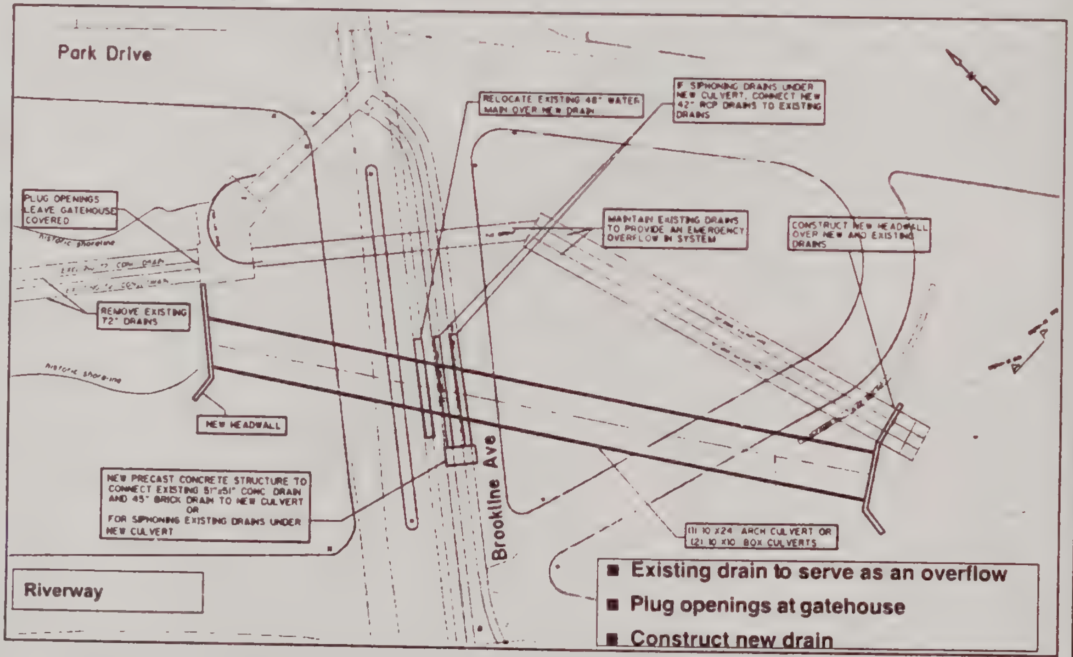
Park Drive
REMOVE EXISTING STRUCTURE CONSTRUCT NEW HEADWALL
MAINTAIN EXISTING 72" CONC DRAINS
REGRADE AREA
NEW HEADWALL
Riverway
10'x16' ARCH CULVERT OR 10'x14' BOX CULVERT

Former Sears Lot


Park Drive
Riverway
WATER LINE ALIGNMENT MODIFIED FROM HISTORIC SHORELINE
NEW TOP OF BANK
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 1 OPTIONS 2 & 3 FOR EXACT SHAPE AND PIPE LAYOUT
APPROXIMATE LOCATION OF PROPOSED WATER LINE TO MATCH HISTORIC SHORELINE
RECONSTRUCT FACE OF STRUCTURE IF EXISTING DRAINS ARE TO BE MAINTAINED
historic shoreline
PLUG AND GRADE OVER STRUCTURE IF EXISTING DRAINS ARE ABANDONED
Brookline Ave
historic shoreline
REMOVE EXISTING 72" CONCRETE DRAINS
NEW TOP OF BANK
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 3 OPTIONS 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
APPROXIMATE LOCATION OF WATER LINE TO MATCH HISTORIC SHORELINE
WATER LINE ALIGNMENT MODIFIED FROM HISTORIC SHORELINE
Riverway
NEW TRAPEZOIDAL CHANNEL

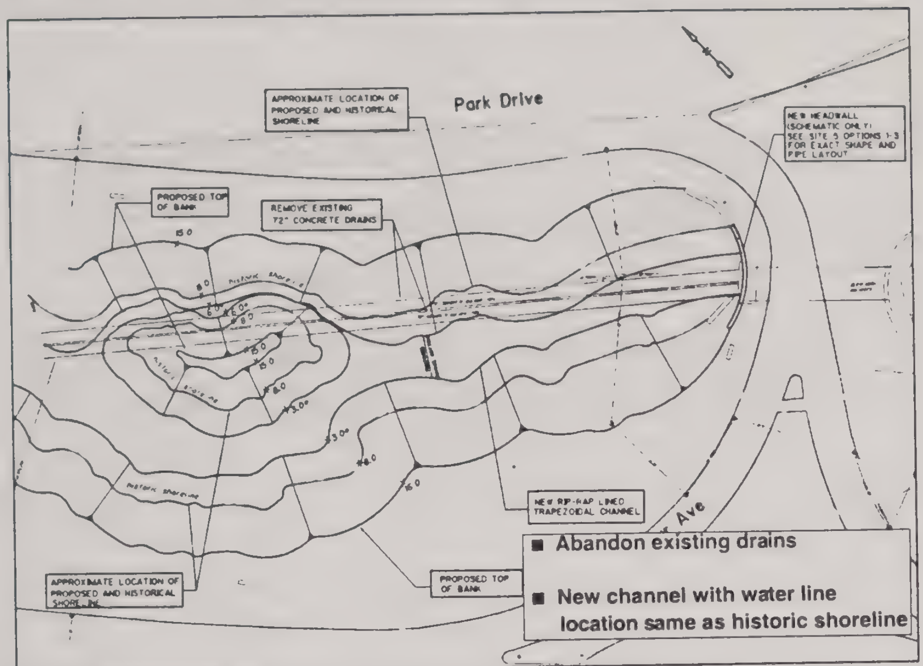
- Abandon or maintain existing drains
- Construct new open channel with water line location modified from historic shoreline

Brookline Avenue at Sears (Landmark Center)


Park Drive
RELOCATE EXISTING 48" WATER MAIN OVER NEW DRAIN
IF SIPHONING DRAINS UNDER NEW CULVERT, CONNECT NEW 42" RCP DRAINS TO EXISTING DRAINS
PLUG OPENINGS LEAVE GATEHOUSE COVERED
historic shoreline
MAINTAIN EXISTING DRAINS TO PROVIDE AN EMERGENCY OVERFLOW IN SYSTEM
CONSTRUCT NEW HEADWALL OVER NEW AND EXISTING DRAINS
REMOVE EXISTING 72" DRAINS
historic shoreline
NEW HEADWALL
NEW PRECAST CONCRETE STRUCTURE TO CONNECT EXISTING 51"x51" CONC DRAIN AND 45" BRICK DRAIN TO NEW CULVERT OR FOR SIPHONING EXISTING DRAINS UNDER NEW CULVERT
Brookline Ave
(1) 10 X24 ARCH CULVERT OR (2) 10 X10 BOX CULVERTS
Riverway

- Existing drain to serve as an overflow
- Plug openings at gatehouse
- Construct new drain

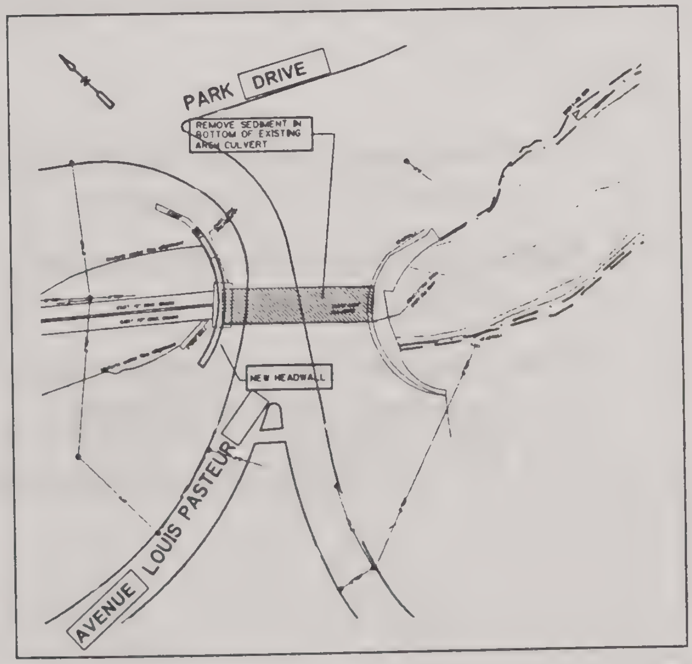
Upstream of Fens Bridge


Park Drive
APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 5 OPTIONS 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
PROPOSED TOP OF BANK
REMOVE EXISTING 72" CONCRETE DRAINS
15.0
8.0
6.0
historic shoreline
NEW RIP-RAP LINED TRAPEZOIDAL CHANNEL
Ave
APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
PROPOSED TOP OF BANK

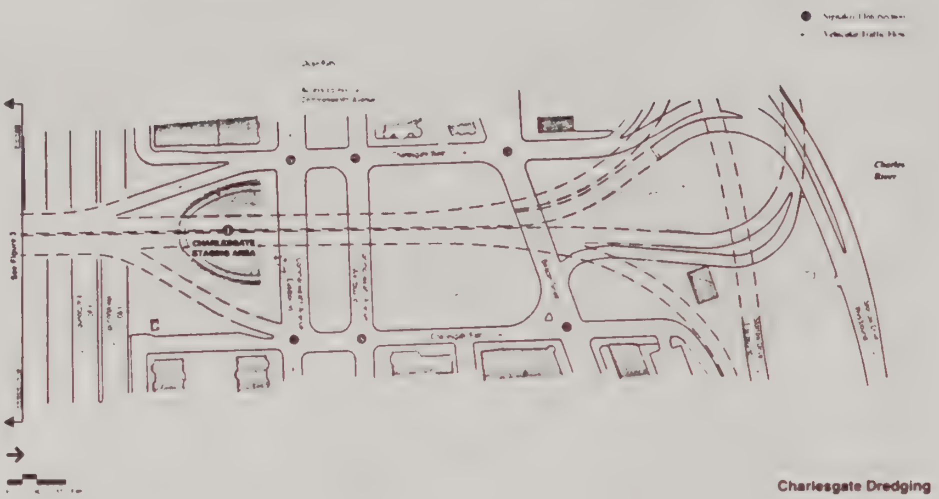
- Abandon existing drains
- New channel with water line location same as historic shoreline

Fens Bridge

- Maintain existing arch culvert
- Dredge bottom of existing culvert



Charlesgate



Sediment Characterization Summary

- Samples collected of the fill and native material at 128 locations
- Approximately 360 samples have been collected
- Samples were collected at 2-ft depth intervals, generally from 0 to 8 feet
- Sampling identified native strata under river

Landfill Disposal Costs

- In State
  - Unlined $50/ton (10 % of sediments)
  - Lined $60/ton (11 % of sediments)
- Out of State $110/ton (61 % of sediments)
- RCRA $250/ton (18 % of sediments)

Water Quality Summary

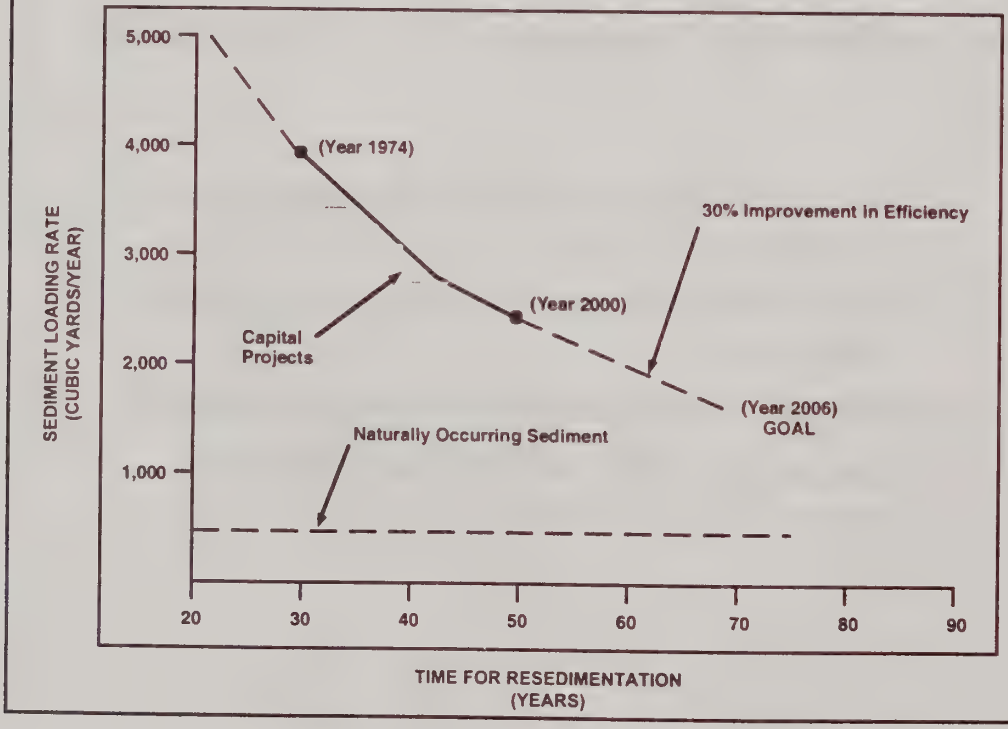
- Dissolved oxygen content has improved in recent years
- Fecal coliform isolated problems but overall much better
- Nitrogen and phosphorus are high in general
- Suspended solids are variable, but overall reduced from 1970's

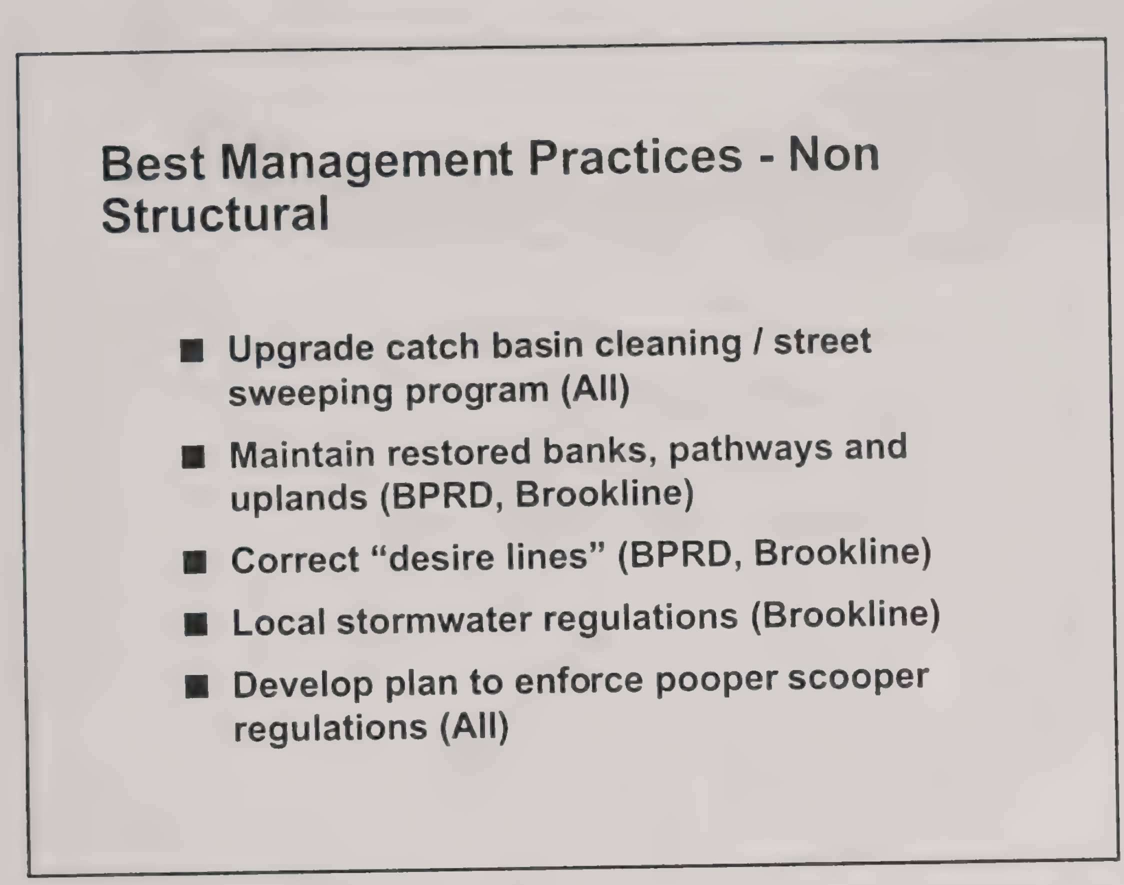
Objectives of Best Management Practices (BMPs)

- Minimize re-sedimentation rates***
- Improve water quality
- Maintain project improvements
- Reduce runoff volume
- Contribute to attainment of Fishable/Swimmable goal for Charles River

***Overriding Objective

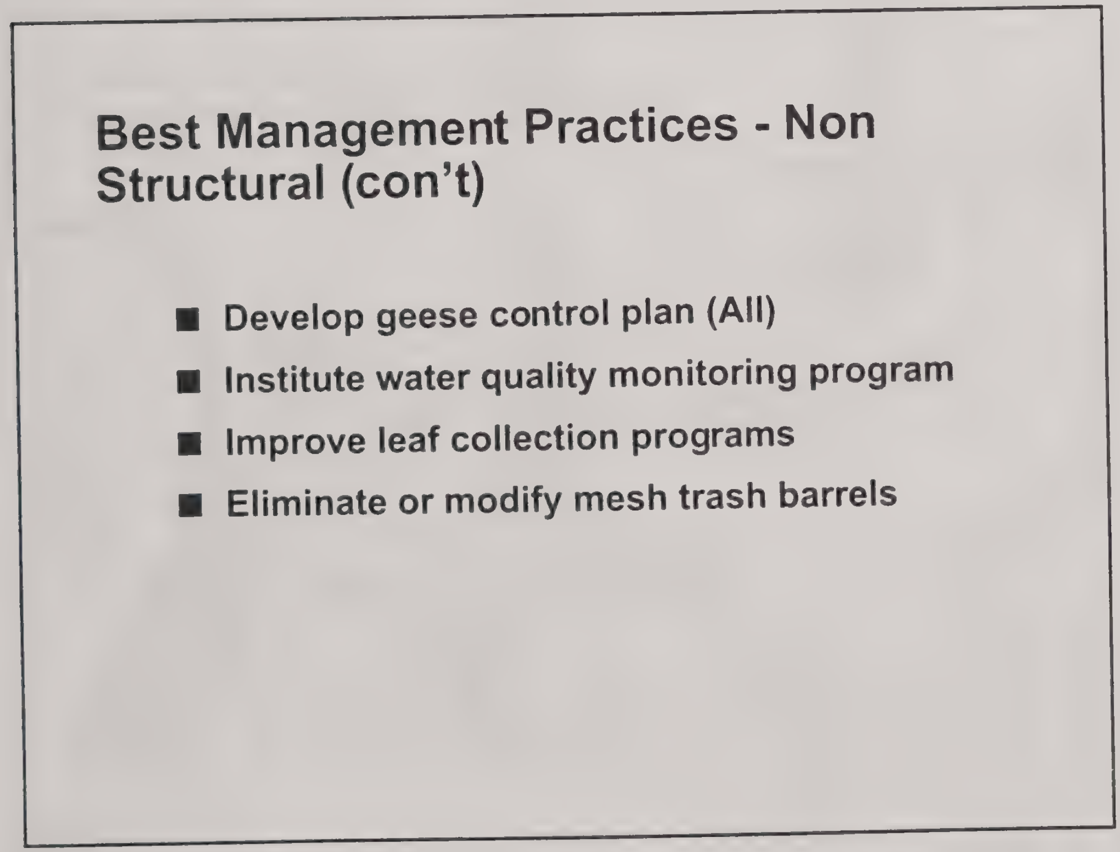
Sediment Loads Over Time





Best Management Practices - Non Structural

- Upgrade catch basin cleaning / street sweeping program (All)
- Maintain restored banks, pathways and uplands (BPRD, Brookline)
- Correct “desire lines” (BPRD, Brookline)
- Local stormwater regulations (Brookline)
- Develop plan to enforce pooper scooper regulations (All)

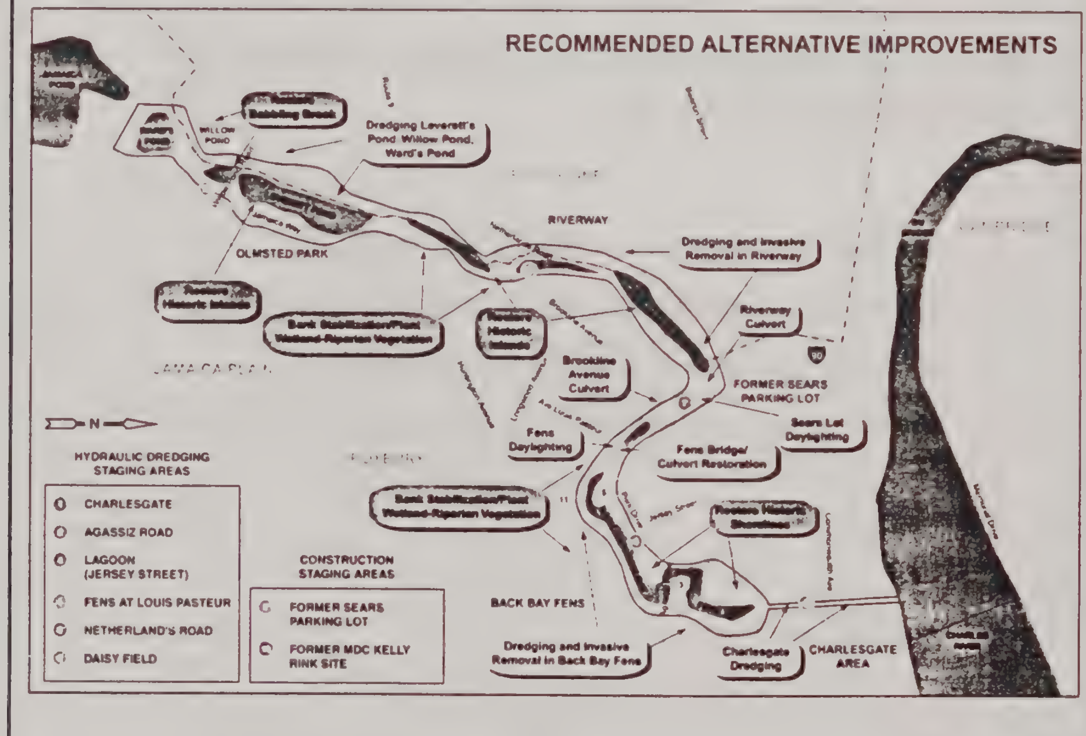


Best Management Practices - Non Structural (con’t)

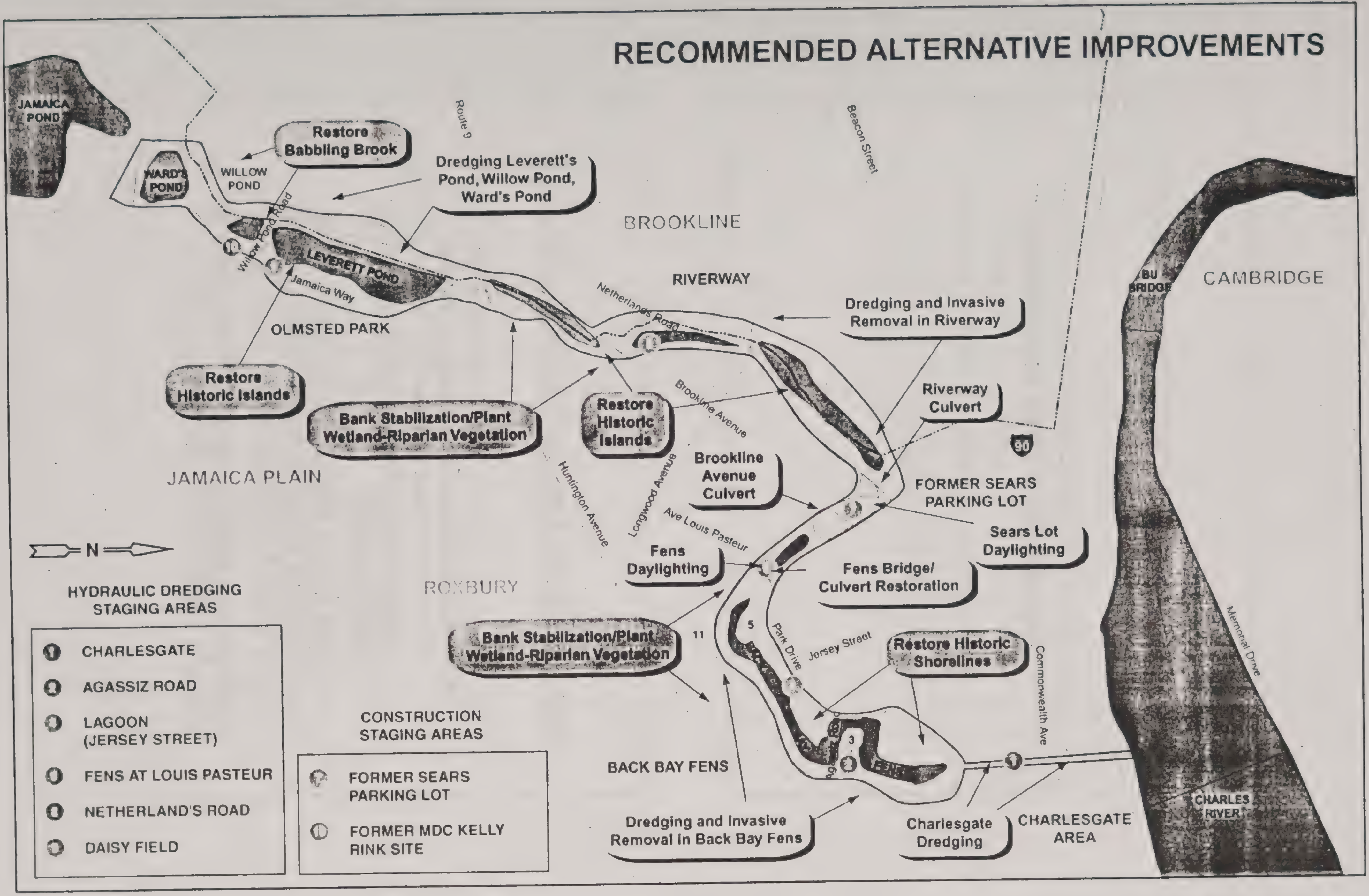
- Develop geese control plan (All)
- Institute water quality monitoring program
- Improve leaf collection programs
- Eliminate or modify mesh trash barrels

Best Management Practices - Structural

- Wetland bioretention swale - Victory Gardens
- Particle Separators
- Stormceptor at Walnut Street
- In-stream sedimentation basins


RECOMMENDED ALTERNATIVE IMPROVEMENTS
Babbling Brook
WILLOW POND
Dredging Leverett's Pond, Willow Pond, Ward's Pond
OLMSTED PARK
Restore Historic Islands
Bank Stabilization/Plant Wetland-Riparian Vegetation
RIVERWAY
Dredging and Invasive Removal in Riverway
Restore Historic Islands
Riverway Culvert
90
Brookline Avenue Culvert
FORMER SEARS PARKING LOT
Sears Lot Daylighting
Fens Daylighting
Fens Bridge/ Culvert Restoration
Bank Stabilization/Plant Wetland-Riparian Vegetation
Restore Historic Shorelines
BACK BAY FENS
Dredging and Invasive Removal in Back Bay Fens
Charlesgate Dredging
CHARLESGATE AREA
N
HYDRAULIC DREDGING STAGING AREAS
CHARLESGATE
AGASSIZ ROAD
LAGOON (JERSEY STREET)
FENS AT LOUIS PASTEUR
NETHERLAND'S ROAD
DAISY FIELD
CONSTRUCTION STAGING AREAS
FORMER SEARS PARKING LOT
FORMER MDC KELLY RINK SITE

RECOMMENDED ALTERNATIVE IMPROVEMENTS



Questions and Answers

Recommended Project for EIR (1 of 4)

- Daylight former Sears Parking Lot and upstream of Fens Bridge with natural channel configuration following historic shoreline where possible.
- Fully dredge Muddy River primarily using hydraulic dredging method with a primary group of 6 staging areas.
- Replace culverts under Riverway, Brookline Avenue with arch culverts.

Recommended Project for EIR (con't 2 of 4)

- Remove invasive species along entire length of project area primarily using mechanical means from the water.
- Plant wetland and riparian vegetation along banks where invasives are removed and along banks with no vegetation to stabilize banks and reduce erosion.

Recommended Project for EIR (con't 3 of 4)

- Restore historic islands to increase wildlife habitat and reclaim the Olmsted historic landscape.
- Provide sandy gravel bottom in selected river / pond areas to encourage fish spawning.
- Restore Babbling Brook downstream of Willow Pond by modifying current outlet and refurbishing bed upstream of Willow Pond.
- Rehabilitate bank areas along the project area to restore historic shorelines where possible.

Recommended Project for EIR (con't 4 of 4)

- Rehabilitate the project area in accordance with the 1990 Emerald Necklace Master Plan ("the continuum").
- Institute Best Management Practices (BPMs) for stormwater management.

November 8, 2000 Public Information Meeting

Meeting Summary

----to be added when issued----

MEMORANDUM

DATE: October 4, 2000

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Upcoming Meeting Schedule; Other Information

Schedule of Upcoming Meetings

No.	Day	Date	Time	Topic(s)	Location
11	Mon.	23-Oct-2000	6 PM	Alternatives Evaluation	Egan Center, NU
12	Mon.	30-Oct-2000	6 PM	Alternatives Evaluation, Part 2: BMP Alternatives Analysis	Egan Center, NU
---	Wed.	08-Nov-2000	6 PM	*Public Meeting*	Egan Center, NU
13	Wed.	15-Nov-2000	6 PM	Mitigation & Costs	Faculty Center, NU
14	Thur.	25-Jan-2001	6 PM	EIR/EA Presentation	Egan Center, NU

5:45 p.m. Refreshments
6:00 p.m. Presentation & Discussion
8:30 p.m. Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Enclosures:

1. Meeting Summary, CAC Meeting of September 19, 2000
2. Meeting Summary, CAC Meeting of September 28, 2000.

   Please review the 2 meeting summaries. Submit written comments within 7 calendar days John Burckardt by fax(617-635-3256) or e-mail (jburckardt@ci.boston.ma.us) *The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.*

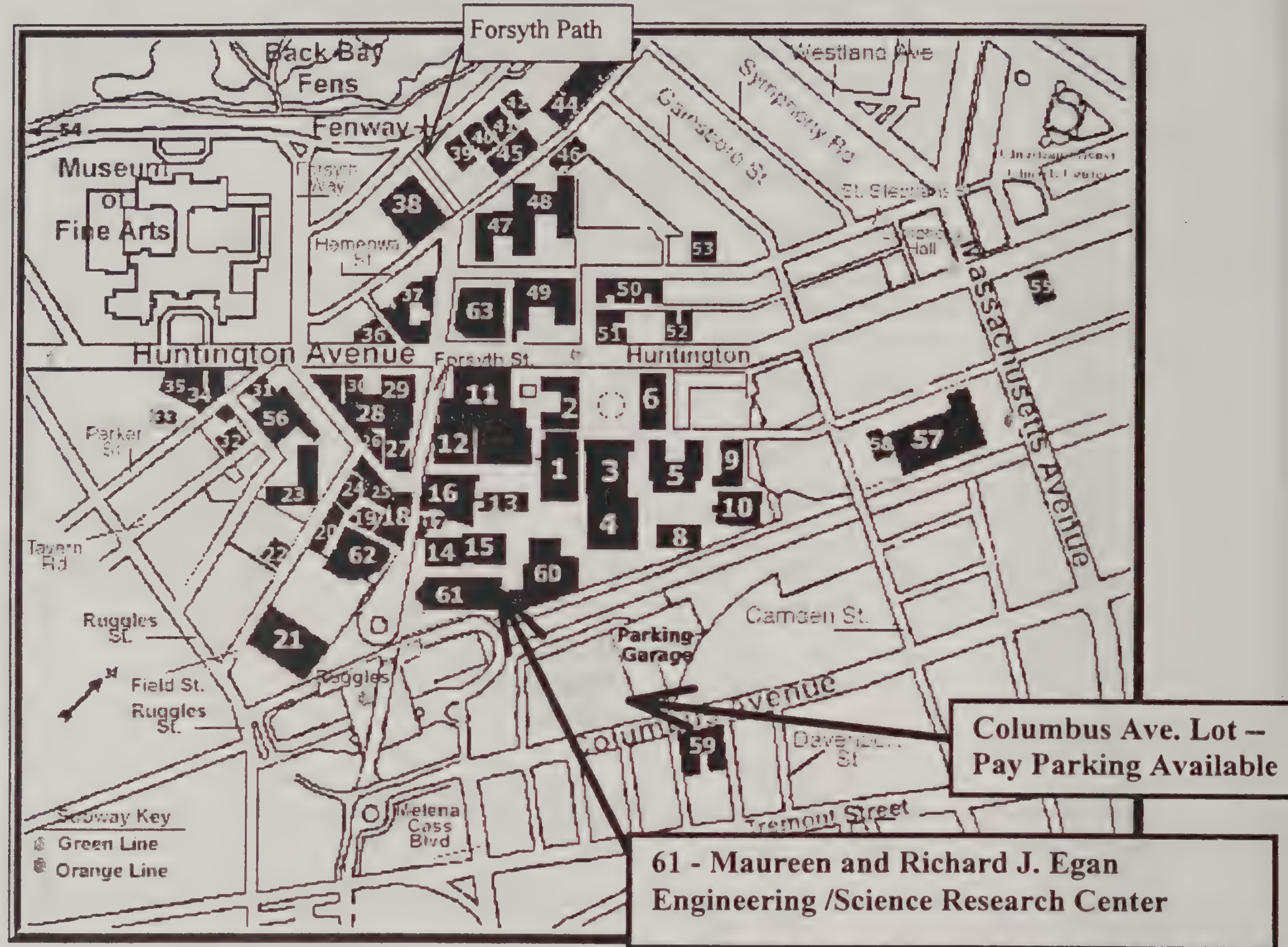
3. Glossary of Terms –*Definitions for September 28, 2000 CAC Meeting*
   Please place in Tab #5 of the CAC Workbook
4. Revised List of Abbreviations — Please place in Tab #5 of the CAC Workbook

Directions to

Maureen and Richard J. Egan Engineering /Science Research Center

Raytheon Amphitheater -- Room 240

NORTHEASTERN UNIVERSITY CAMPUS



Forsyth Path

Columbus Ave. Lot -- Pay Parking Available

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee

Faculty Club, Northeastern University
Kerr Hall – 96 The Fenway

Wednesday, November 15, 2000
6:00p.m. - 8:30p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:20

Susan Jeghelian*, MA Office of Dispute Resolution, CAC Facilitator*

John Burckardt, *P. E, Project Manager*

II. **Schedule Update & CAC Comment Process** 6:20 - 6:50

John Burckardt, *P. E, Project Manager*

Susan Jeghelian*, MA Office of Dispute Resolution, CAC Facilitator*

III. **Project Update** 6:50 – 7:00

Bruce R. Conklin, P. E., *Vice President*
Camp Dresser & McKee Inc.

IV. **Presentation: Mitigation Measures** 7:00 – 7:45

Bruce R. Conklin, P. E., *Vice President*
Camp Dresser & McKee Inc.

Q&A/Discussion with CAC 7:45 – 8:20

V. **Questions and Answers (General Public) Wrap Up** 8:20 – 8:30

Camp Dresser & McKee Inc.

Muddy River Restoration Project

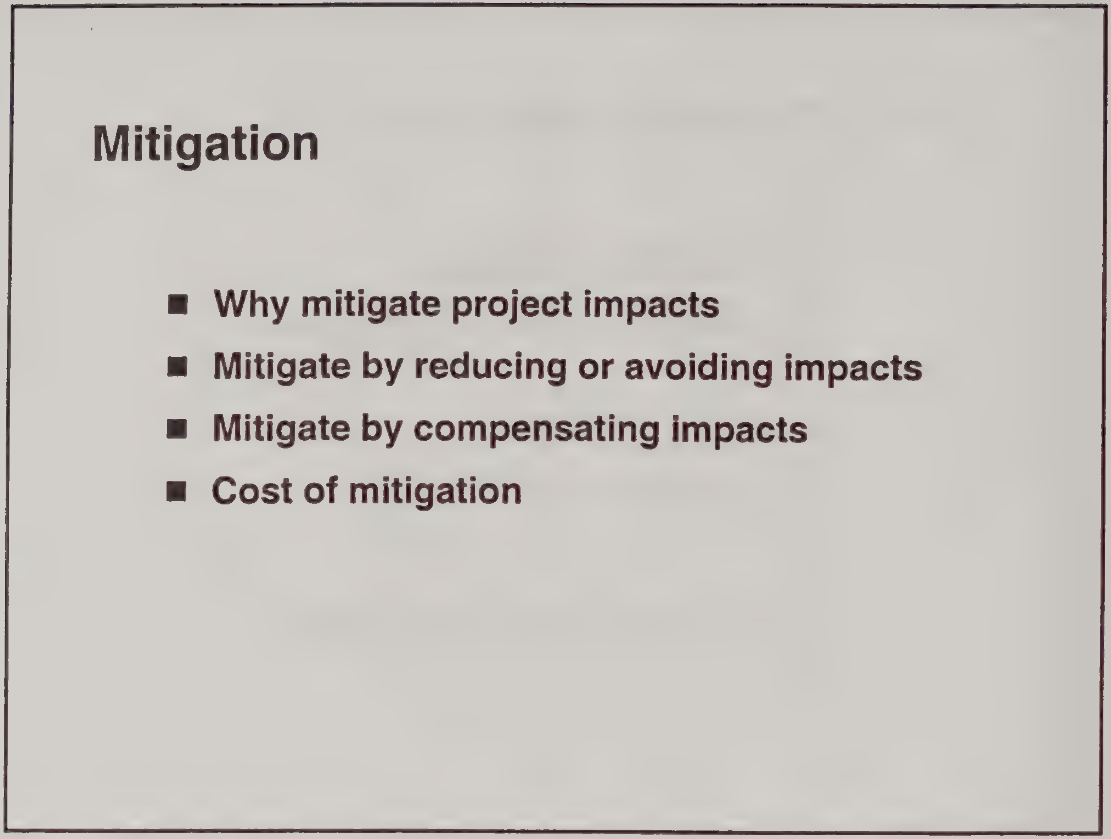
Mitigation

November 15, 2000

Bruce Conklin P.E., CDM

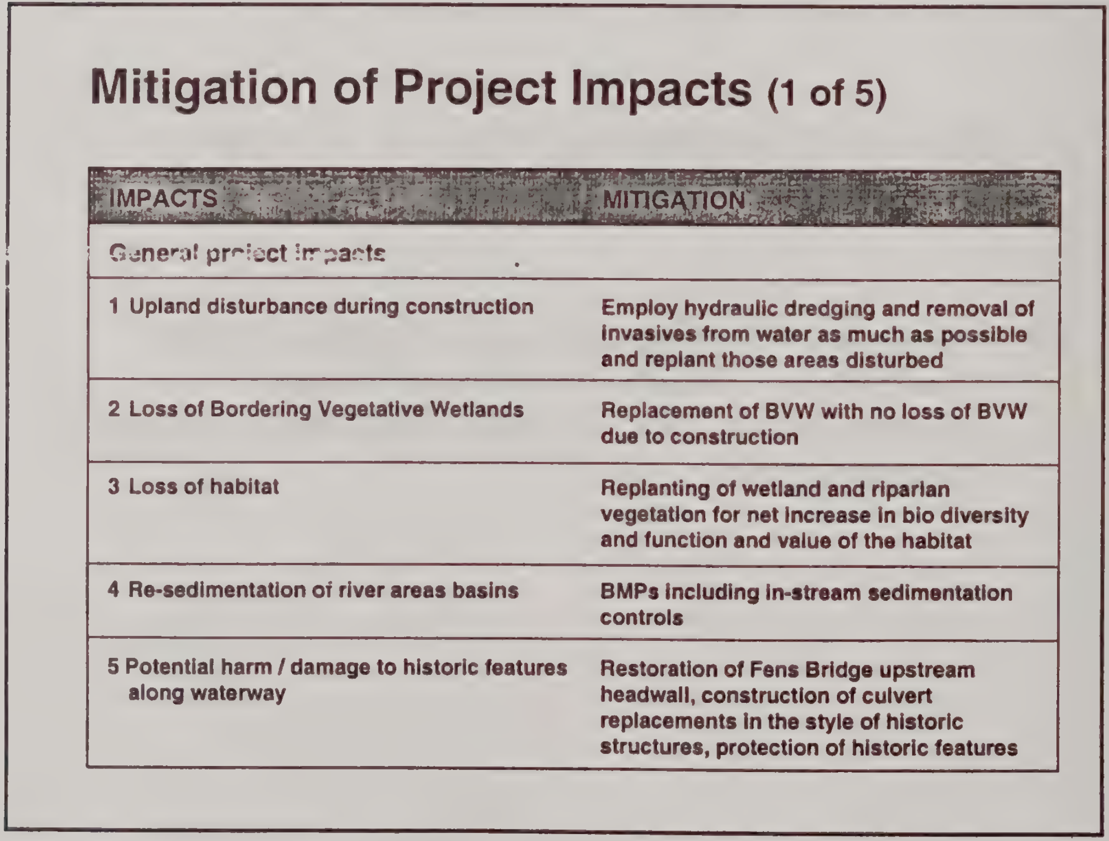
Emerald Necklace Citizens Advisory Committee Presentation

Emerald Necklace Environmental Master Plan and Phase 1 Muddy River Flood Control, Water Quality, Habitat Enhancement and Historic Preservation



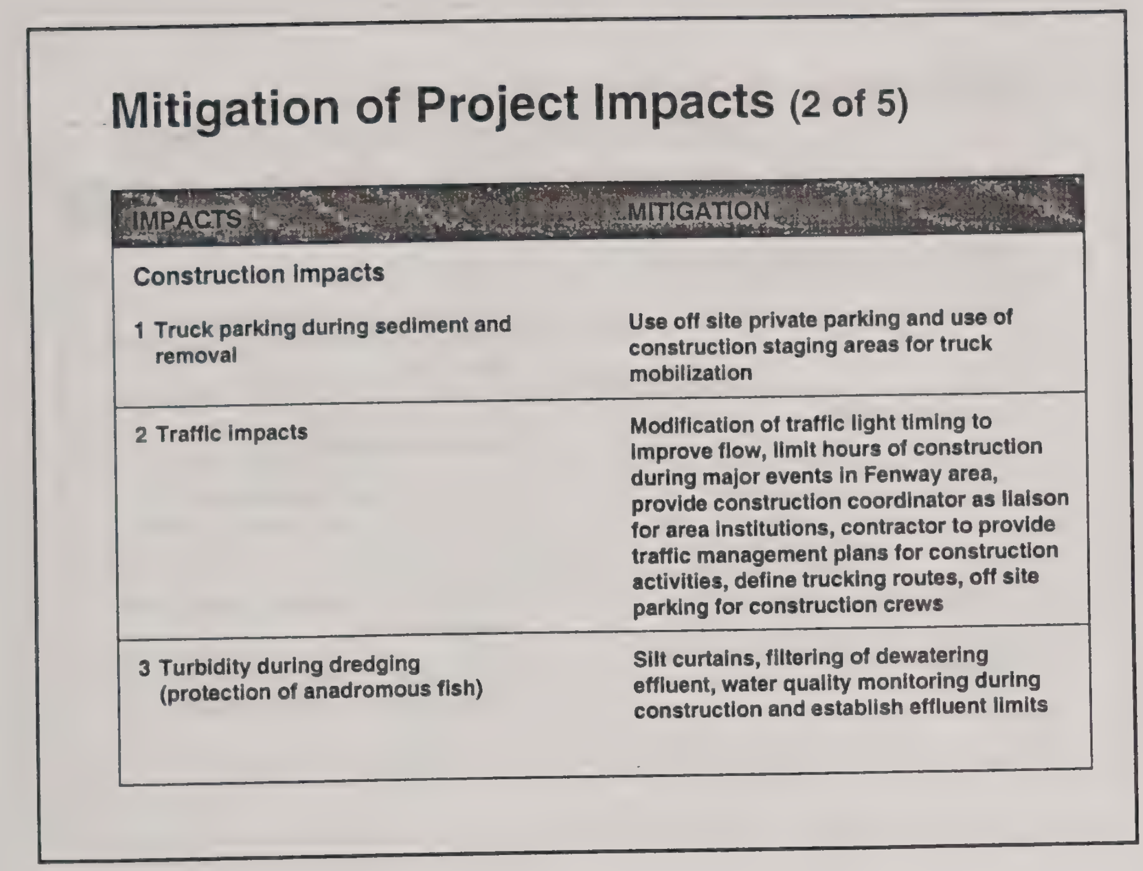
Mitigation

- Why mitigate project impacts
- Mitigate by reducing or avoiding impacts
- Mitigate by compensating impacts
- Cost of mitigation



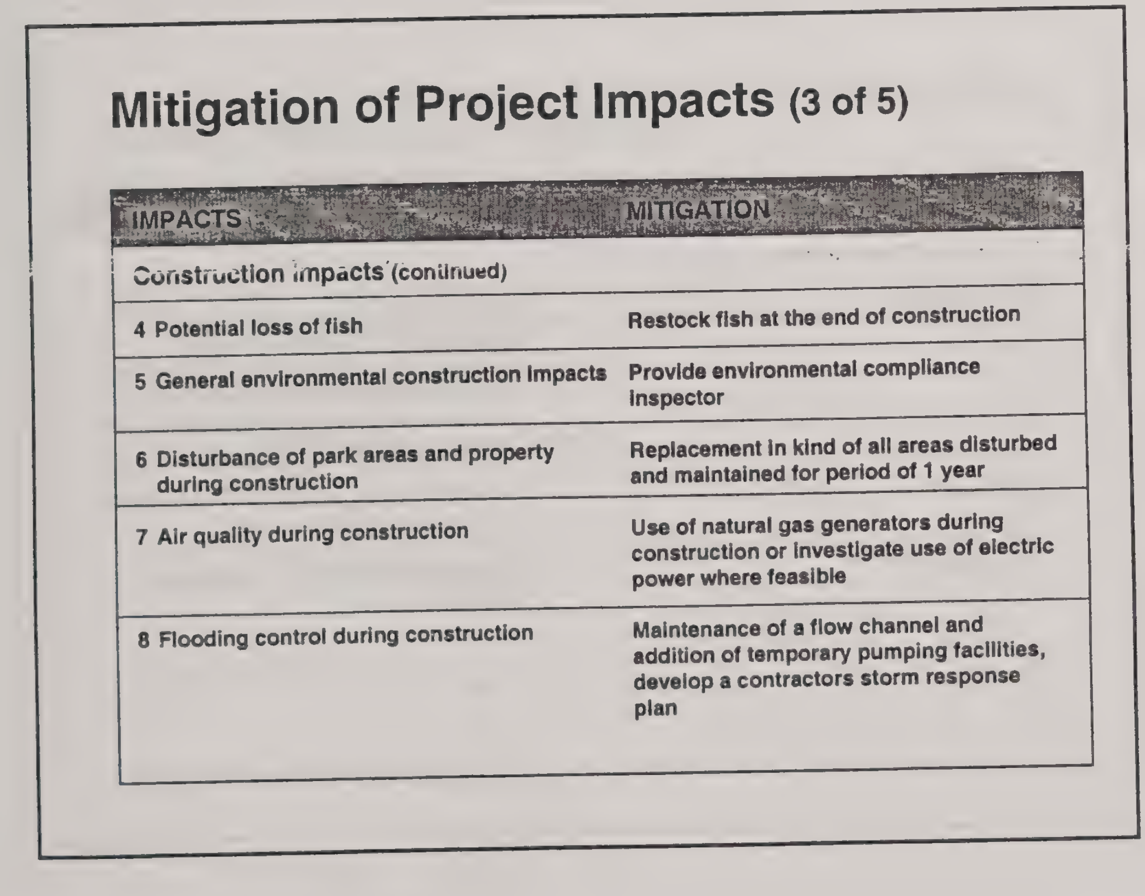
Mitigation of Project Impacts (1 of 5)

IMPACTS	MITIGATION
General project impacts	
1 Upland disturbance during construction	Employ hydraulic dredging and removal of invasives from water as much as possible and replant those areas disturbed
2 Loss of Bordering Vegetative Wetlands	Replacement of BVW with no loss of BVW due to construction
3 Loss of habitat	Replanting of wetland and riparian vegetation for net increase in bio diversity and function and value of the habitat
4 Re-sedimentation of river areas basins	BMPs including in-stream sedimentation controls
5 Potential harm / damage to historic features along waterway	Restoration of Fens Bridge upstream headwall, construction of culvert replacements in the style of historic structures, protection of historic features



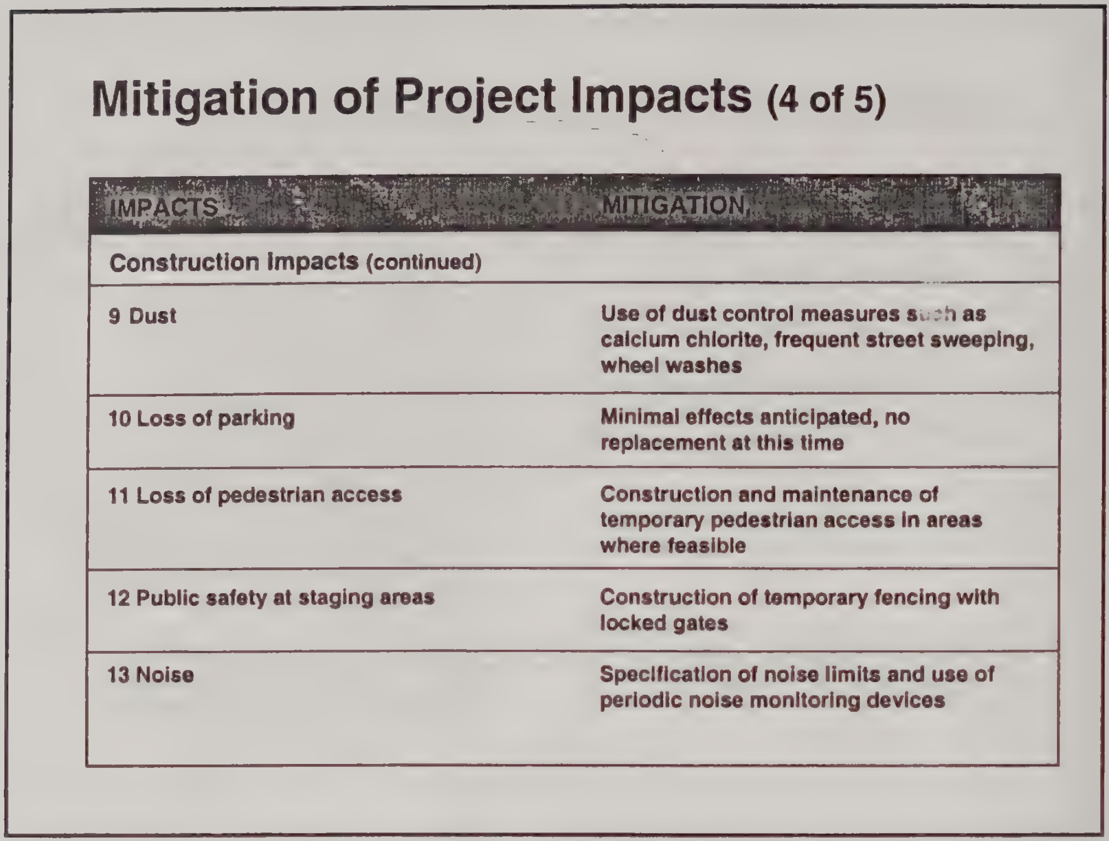
Mitigation of Project Impacts (2 of 5)

IMPACTS	MITIGATION
Construction impacts	
1 Truck parking during sediment and removal	Use off site private parking and use of construction staging areas for truck mobilization
2 Traffic impacts	Modification of traffic light timing to improve flow, limit hours of construction during major events in Fenway area, provide construction coordinator as liaison for area institutions, contractor to provide traffic management plans for construction activities, define trucking routes, off site parking for construction crews
3 Turbidity during dredging (protection of anadromous fish)	Silt curtains, filtering of dewatering effluent, water quality monitoring during construction and establish effluent limits



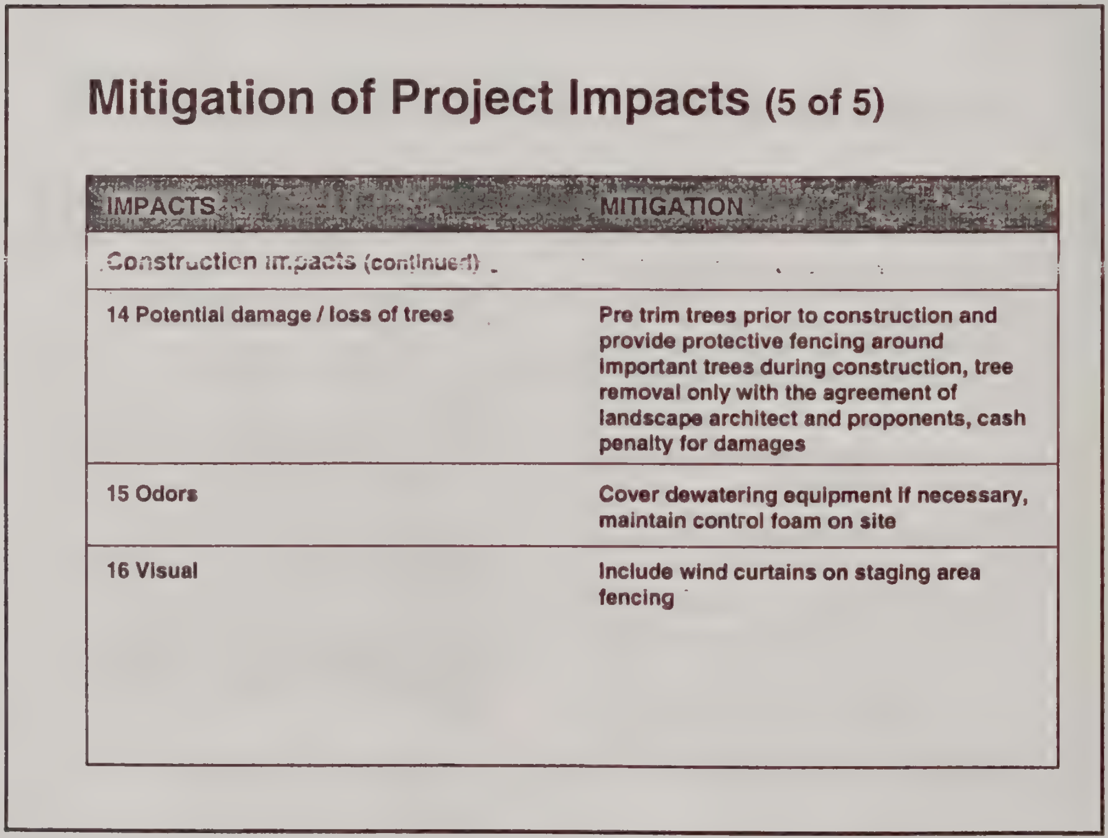
Mitigation of Project Impacts (3 of 5)

IMPACTS	MITIGATION
Construction impacts (continued)	
4 Potential loss of fish	Restock fish at the end of construction
5 General environmental construction impacts	Provide environmental compliance inspector
6 Disturbance of park areas and property during construction	Replacement in kind of all areas disturbed and maintained for period of 1 year
7 Air quality during construction	Use of natural gas generators during construction or investigate use of electric power where feasible
8 Flooding control during construction	Maintenance of a flow channel and addition of temporary pumping facilities, develop a contractors storm response plan



Mitigation of Project Impacts (4 of 5)

IMPACTS	MITIGATION
Construction impacts (continued)	
9 Dust	Use of dust control measures such as calcium chlorite, frequent street sweeping, wheel washes
10 Loss of parking	Minimal effects anticipated, no replacement at this time
11 Loss of pedestrian access	Construction and maintenance of temporary pedestrian access in areas where feasible
12 Public safety at staging areas	Construction of temporary fencing with locked gates
13 Noise	Specification of noise limits and use of periodic noise monitoring devices



Mitigation of Project Impacts (5 of 5)

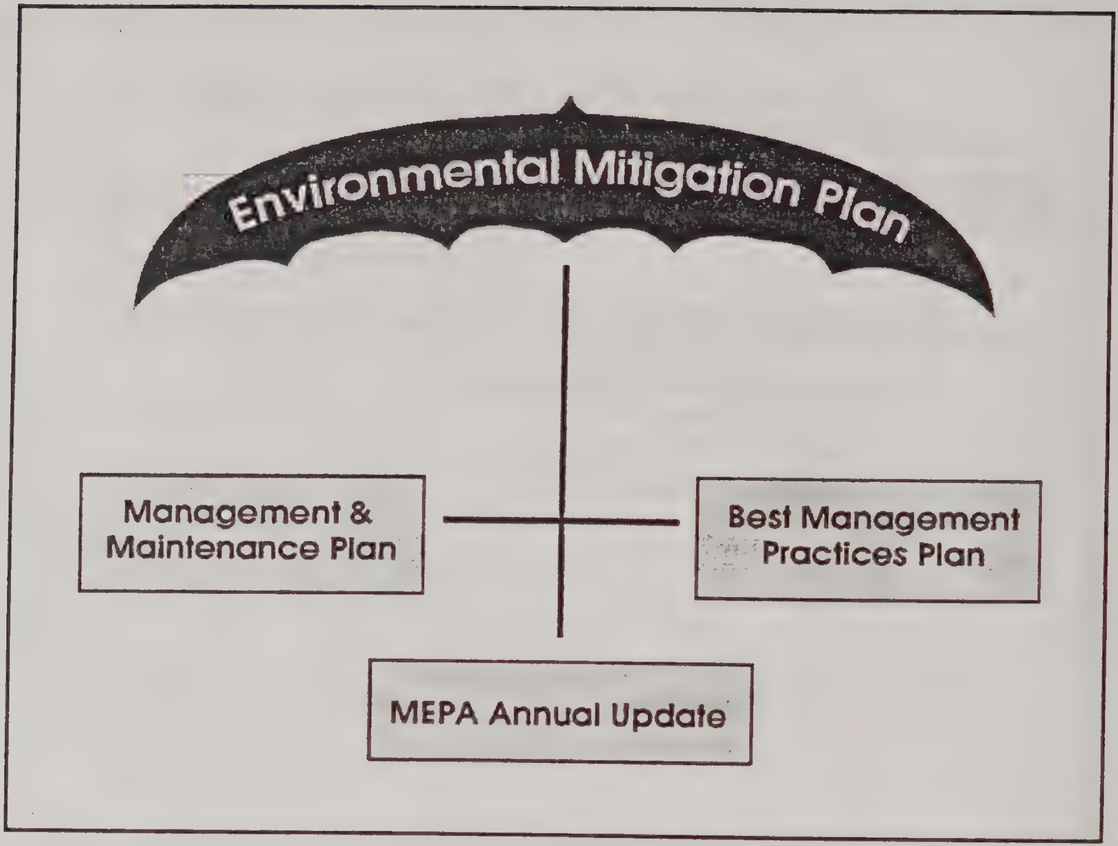
IMPACTS	MITIGATION
Construction impacts (continued)	
14 Potential damage / loss of trees	Pre trim trees prior to construction and provide protective fencing around important trees during construction, tree removal only with the agreement of landscape architect and proponents, cash penalty for damages
15 Odors	Cover dewatering equipment if necessary, maintain control foam on site
16 Visual	Include wind curtains on staging area fencing

Institutionalizing Mitigation Measures

- Long term management / maintenance plans
- Construction documents
- Permits

Long Term Maintenance / Management Plans

- Monitoring and Maintenance Plan
- Stormwater BMP Plan
- MEPA Annual Update



Environmental Mitigation Plan

Management & Maintenance Plan

Best Management Practices Plan

MEPA Annual Update

Construction Documents

- Dredge materials management plan
  - Siltation and turbidity control
  - Water quality monitoring
- Specifications
- Traffic management plan

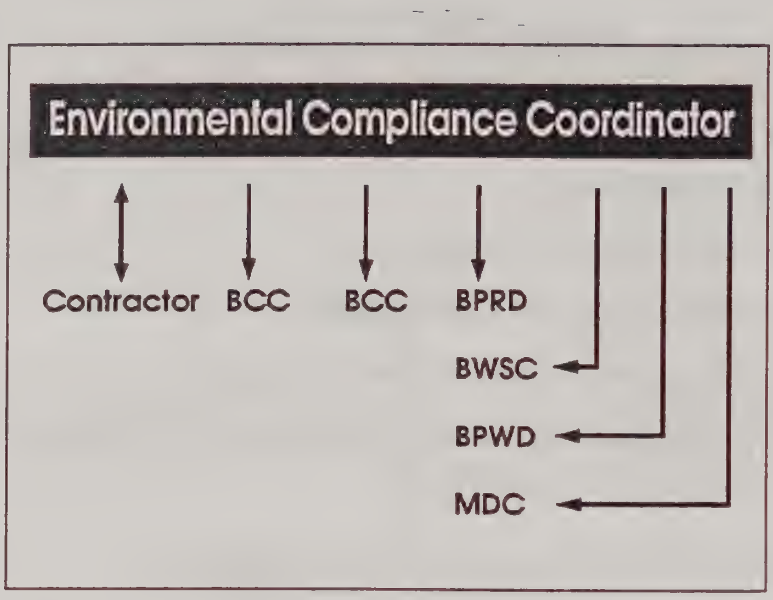
Environmental Permits

- Conservation Commission Orders of Conditions
- MGL Ch. 91 Conditions
- Water Quality Certification
- Department of the Army Permit
- Construction Best Management Practices Inspection for S/DPPP

Historic / Preservation Permits

Environmental Compliance Monitoring

- Project Proponent Funded Position
- Best Management Practices Inspection Program for Stormwater / Drainage Pollution Prevention Program
- Air Quality / Dust Control
- Noise Control
- Pedestrian Access
- Rodent Control



Environmental Compliance Coordinator

Contractor BCC BCC BPRD

BWSC

BPWD

MDC

MEPA Annual Update

Questions and Answers

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – November 15, 2000 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I **Welcome, Opening Remarks & Comments Received**
Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II **Schedule Update and CAC Comment Process**
Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

III **Project Update**
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

IV **Presentation: Mitigation Measures**
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc

Q&A/Discussion with CAC

V **Questions and Answers (General Public) Wrap Up**

Summary

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian opened the meeting. There were no CAC member follow-up comments from the last meeting received or other general remarks.

II Schedule Update and CAC Comment Process

John Burckardt informed the CAC that the November 8 public information meeting was a success. Attendance at the meeting was good and support for the project is strong among those who attended the meeting.

Mr. Burckardt informed the CAC that a meeting to present the detailed cost information on the project is scheduled for December 4, the location will be determined. [Note: December 4 meeting was cancelled shortly thereafter and rescheduled for January 25, 2001.]

Mr. Burckardt summarized the CAC's review and comment process on the Draft Environmental Impact Report. He explained that the CAC will have 60 days upon receipt of the document to review it and provide written comments to the Secretary of Environmental Affairs.

Ms. Jeghelian then reviewed some options that CAC may utilize in coordinating and developing their comments. Specifically, Ms. Jeghelian asked the CAC the following:

1. Would the CAC like to schedule additional meetings after the DEIR is presented to develop its comments?
2. If so, how many meetings and how often would the CAC like to meet during the 60-day comment period? (The goal is to set up a schedule of dates/times at the 12/4 CAC meeting.)
3. How would the CAC like to review the DEIR and develop its comments? (e.g., past CAC's have reviewed different DEIR chapters at each meetings; the CAC can comment on CAC process as well as comment on the adequacy of the DEIR)
4. How would the CAC like to draft its comments? (e.g., as a group, through individual(s), through MODR or proponent note-takers)

Ms. Jeghelian asked the CAC to consider these and other options and to report back to John Burckardt on how they want to proceed.

Discussion among CAC members followed. The CAC members present at the 11/15 meeting tentatively agreed to the following for consideration at a subsequent meeting:

- The CAC will schedule a few meetings to review DEIR together (meeting time 6-8:30 PM weekday evenings; maybe a weekend 1/2-day meeting, if helpful).
- The goal will be for the CAC to draft a comment letter that reflects the consensus comments of the CAC.
- The CAC Meetings will be open to the public but the public will not participate in developing CAC comments or CAC decision-making. (This arrangement is acceptable to MEPA, since the comment letter is to be the CAC's and the public has a comment period after the DEIR is filed.)
- The CAC will consider the option of submitting its comments within 30 days so that its comment letter can become part of the DEIR that is circulated to the general public.
- The CAC will designate subgroups for the purpose of writing up comments agreed to/developed by the group as a whole.
- The CAC will review and edit draft comments together (perhaps using a laptop computer with a projector).

It was noted that during the public review of the DEIR, CAC members would also have the opportunity to submit their own individual comments and/or to submit comments through the association or entity that they may represent.

CAC members asked that setting a schedule for document review meetings should be deferred to the next CAC meeting when the project team will better know when the final Draft Environmental Impact Report will be distributed to them. CAC members asked the Boston Parks Department to propose CAC document review meeting dates.

Some CAC members asked for a memorandum to the CAC that details the document review and comment development process. *(This draft outline was mailed to the CAC on November 15, 2000).*

III Project Update

Mr. Conklin prefaced the project update by explaining that during the month of October much of the project team's focus involved the preparations for the two CAC meetings and the public information meeting held on November 8.

Over the past month, progress was made on the following:

- The BMP section of the document has been updated and improved. Input provided by the CAC at the October 30 meeting has been incorporated into this section of the document.

- The alternatives analysis has been completed.

- The construction cost estimate has been prepared and is under review by the Boston Parks Department, Town of Brookline and other participating agencies.

- The project team is busy writing the Draft Environmental Impact Report.

- The project team had a successful site walk meeting with the Pre-Application Review Committee (PRC) on October 20, 2000.

IV Presentation: Mitigation Measures

A copy of the presentation made by the CDM consultant team is included as Attachment 2.

Mr. Conklin began by stating that the presentation will be an overview of some specific mitigation measures that will be implemented to lessen the environmental impacts of the project. Mr. Conklin added that there are numerous other mitigation measures that will be incorporated into the project but are not a part of this presentation.

Mr. Conklin pointed out that the name of the project has been slightly modified to better qualify the project for certain sources of federal funding. "…Habitat Enhancement and Historic Rehabilitation" has been modified to "…Habitat Enhancement and Historic

Preservation". Although the presentation at the meeting did not reflect this change, the title modification is reflected in Attachment 2.

Mr. Conklin added that the project as a whole is a mitigation measure, i.e. mitigating flooding, to a certain degree but nevertheless the project team has to mitigate the impacts of the improvement measures.

Q&A/Discussion with CAC

How will valuable shrubs and other plantings be protected?

Mr. Conklin responded stating that trees will be protected but the protection of specific shrubs has not been addressed. Shrubs and other plantings will be protected to the maximum extent possible.

Please explain and give an example of in-stream sediment controls?

An in-stream sedimentation control would be a section of the river dredged slightly deeper than the original channel depth. This additional dredging would create a sedimentation area located downstream of major outfalls in the river to collect sediments in a localized area for future removal.

How is re-sedimentation of the river, after it has been dredged, an impact?

Mr. Conklin explained that the river will be dredged in a way to lessen the impact of re-sedimentation. Although the BMP measures that will be implemented are for the purpose of minimizing re-sedimentation, some re-sedimentation will still occur. Dredging will likely be much deeper in the center of the river, with a 4-to-1 slope to the bank edge. These deeper areas will collect some of the re-sedimentation, and in doing so, will lessen the impact of the re-sedimentation on the shallower portions of the river.

How will historic areas that are impacted be re-created?

Mr. Conklin stated that all disturbed areas will be restored. At the Fens Bridge the headwall on the upstream side will be restored. Culvert headwalls will be treated in a manner reflecting the style of the original Olmsted design.

Some elements are not part of the current project. Fran Beatty noted that the restoration of the Evans Way Bridgeis in the 1990 Master Plan but are not part of this project. The focus of this project is the river.

A CAC member commented that the re-creation of the historic beach areas is a mitigation measure.

Mr. Conklin said the re-creation of historic beaches will be included as previously described. He added that historic beach re-creation will be added to the list of the project mitigation measures.

Several CAC members expressed concern that slide 3, general project impacts, is confusing.

Mr. Conklin responded stating that the purpose of the slide is to show that the project itself will be mitigation for the effects of neglect over the years. Mr. Conklin added that the table is not clear and it will be revised.

In the Draft Environmental Impact Report, does the CDM team need to demonstrate how the project conforms to other plans such as the 1990 Master Plan?

The DEIR will include the Emerald Necklace Master Plan as an appendix. The DEIR will also contain plans showing replacement and mitigation planting. The design of this planting will be based on the Master Plan.

A CAC member commented that the waterway itself is a historic feature.

Mr. Conklin said that the CDM team is trying to set an overall historic tone and framework to the project. Paul Demit, from CDM, added that with respect to the waterway itself, they are focusing on meeting state water quality regulations and Orders of Conditions that will be promulgated by the Boston and Brookline Conservation Commissions.

A CAC member followed up with the comment that all the land surrounding the water is under jurisdiction of historic regulatory agencies. Thus, to do any work in the water that requires access from land, that work will be under jurisdiction of the historic regulatory agencies.

A CAC member asked about site runoff, fixing desire lines, erosion and runoff during construction. Other CAC members commented that mitigating these impacts is critically important.

Mr. Conklin said the Boston and Brookline Conservation Commissions will provide specific direction. The Orders of Conditions will specify mitigation measures to address these issues. The Conservation Commissions will closely review and scrutinize CDM's proposed mitigation measures for these impacts.

If, in the process of controlling runoff during construction, basins are constructed and there is disturbance to the landscape, will the disturbed landscape be restored to what it once was historically?

Mr. Conklin responded that disturbed areas will be restored to their current uses.. The Fens Bridge is the one area that is the exception, where historic restoration is proposed.

(Note that all restoration of disturbed areas will be in accordance with the Emerald Necklace Master Plan. Along the riverbanks, plantings and open turfed banks will be in accordance with the Master Plan and the historic treatments described therein. At the Daisy Field staging area, the ball field will be restored, instead of the open meadow of Olmsted's original design. However, this ball field restoration – including the relocation of the backstop and infield – will be in accordance with the Master Plan.)

Mr. Conklin also explained the stormwater runoff controls in detail, what will be detailed in the contract specifications, and the contractor's requirement to meet the specification for stormwater runoff control.

A CAC member asked if detention or sedimentation basins will be created along the banks of the river for the construction period.

Mr. Conklin stated that given the historic nature of the river, it will not be possible to construct these types of basins along the banks of the river.

How will oversight of the contractor and enforcement of the contract specifications be handled?

Mr. Conklin said this will be addressed later in the meeting.

Will silt curtains be used to control turbidity during the dredging process?

Mr. Conklin responded that silt curtains will be utilized. He added that a serpentine mechanism will be used to extent curtains from bank to bank without impeding flow of the river.

Will bordering vegetated wetland (BVW) areas be disturbed?

Mr. Conklin responded that BVW will be disturbed and replaced with no net loss.

Several CAC members discussed maintenance and upkeep of the proposed improvements, specifically guarantees or warranties of improvements such as the BVW and plantings.

Mr. Conklin responded that the contractor will have to guarantee the improvements, as required by the specification. The standard warranty period is one year. If a longer warranty period is prescribed then the Parks Department will see higher bid prices on the construction contract. Beyond the warranty period, Mr. Conklin recommended that a separate maintenance contract be considered.

Fran Beatty responded that she is concerned about multiple contractors and asked the CDM team to consider adding more maintenance requirements to the contract specification and determine the cost of the maintenance activities.

Some CAC members suggested a 2-year warranty period for the contractor?

Mr. Conklin said there is no problem with a multi-year warranty period but added that the financial incentive for the contractor to honor the warranty is small. By law, the Parks Department could only hold a small percentage of the contract in retainage until the warranty period expires. Mr. Conklin added that in some cases the contractors default on the warra and forfeit the retainage because it is a cost effective for the contractor to do so.

However, based on the suggestion from the CAC, CDM will include a 2-year warranty p for planting.

A CAC member asked why under "Mitigation of Project Impacts", potential damage/loss of trees is listed as #14 and not hire on the list? A certified arborist should also be required on site to determine the amount of pre-trimming and cabling required.

Mr. Conklin responded that the requirement to provide a certified arborist will be added to the contract specification.

A CAC member commented that damage to trees is often latent and not manifest until several years later. What actions will be instituted to ensure that in these cases the contractor, or some entity, will be required to replace or restore a tree that experiences significant impact due to the construction?

In addition, as the first priority, construction activity should avoid trees. Chain link fencing should be used to protect trees and work activity in close proximity to trees should only take place if it cannot be avoided.

Several CAC members commented on the scope of the MEPA Annual Update, which was distributed at the CAC meeting and is included as Attachment 3. These CAC members emphasized the importance of documenting the cost of labor, equipment and other resources that will be needed to develop and implement the maintenance plans. The respective agencies or departments in Boston and Brookline have to dedicate annual funding for the maintenance program.

A CAC member asked about responses to the written comments on the ENF?

Mr. Conklin responded that the Draft Environmental Impact Report will include a section on responses to all comments provided on the ENF.

What public relations activities will occur during the construction phase of the project?

Mr. Conklin responded that public relations activities have been considered. Elements of the public relations effort could include interpretive signage on-site, project fact sheets and updates, public meetings, and the like.

When the staging areas are being restored, will they be restored to the existing grading, or, if historical grading plans are available, will they be restored to the historical plans to the extent that it follows the 1990 Master Plan?

Mr. Conklin responded that the staging areas will be restored to the existing grading, except in areas of daylighting. (This approach is consistent with the Master Plan, which retains the existing grading at the Charlesgate, Agassiz, Lagoon, Netherlands Road, and Daisy Field staging areas. Where daylighting is proposed – former Sears lot and upstream of Fens Bridge – grading will follow the original Olmsted grading plans, with one small exception in the former Sears lot.)

Summing up the question and answer period, CAC members requested the following additional mitigation measures be considered.

Additional Mitigation Measures to be considered:

1. Transplant elderberry shrubs at Rose Garden
2. "Beach" areas
3. Procure a maintenance contractor to insure maintenance of improvements post construction.
4. Delineate contractor corridor on site that keeps contractor away from trees and other resources to the extent possible.
5. Place protection of trees higher up on mitigation table.
6. Response to comment letter on ENF regarding turtles' food source in the sediments.

V Questions and Answers (General Public) Wrap Up

There were no additional questions or comments provided.

Next Meeting

The next meeting of the CAC was scheduled for December 4, 2000 and will focus on a presentation on the project costs. *This meeting was subsequently postponed until January 25, 2001 to allow the project proponent further time to review and analyze the construction cost estimate.*

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – CDM Consultant Team Presentation,
Attachment 3 – Outline of MEPA Annual Update

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

November 15, 2000

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	E B Cutler
Margaret	Dyson	Historic Massachusetts	Margaret Dyson
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	Frances Allen Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	

Emerald Necklace Citizens Advisory Committee

Meeting

November 15, 2000

Sign-In She

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	Arly A Levee
John A.	Martin	Emerald Necklace Conservancy	
Hugh	Mattison	Friends of Leverett Pond	
Lauren	Meier		
Paul	Mentag	Fenway Alliance	Paul Mentag
Mary Crain	Penniman	Charles River Watershed Association	Mary Crain Pennima
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	Marian Sabal
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

November 15, 2000

\\parksmail\bospark\Muddy\CAC Meetings\CAC-13 Nov 15, 2000\[CAC Sign-in Nov_15_2000.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
John Burckardt	Bos Parks	635-4505x6517	jburckardt @ci.boston.ma.us
Fran Beatty	Bos Parks	635-4505	beatty@ci.bost ma.us
Jacquelyn Wilkins	Cortell	781-890-3737 X127	cortell@cortell.c
Carlton L Noyes	Cortell	781,890-3737x128	Cortell@Cortell.com
claire Fluery	95 Park DR	Tel 617-266-1169	garden Soc.
Anne Covert	14 Monmouth St	738-0107	
PETER M. DITTO	TOWN OF BROOKLINE	730-2138	
Bob McDonnell	NU	373-5330	r.mcdonnell@neu.edu

ATTACHMENT 2

Camp Dresser & McKee Inc.

Muddy River Restoration Project

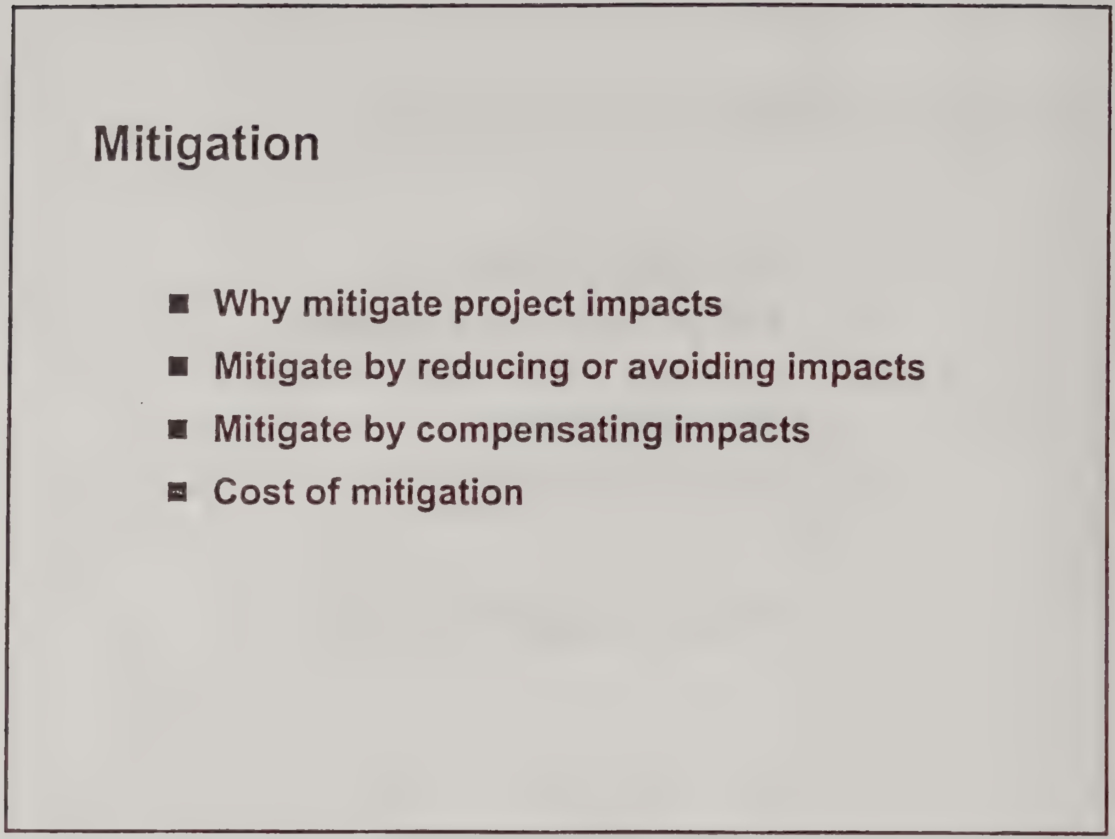
Mitigation

November 15, 2000

Bruce Conklin P.E., CDM

Emerald Necklace Citizens Advisory Committee Presentation

Emerald Necklace Environmental Master Plan and Phase 1 Muddy River Flood Control, Water Quality, Habitat Enhancement and Historic Rehabilitation



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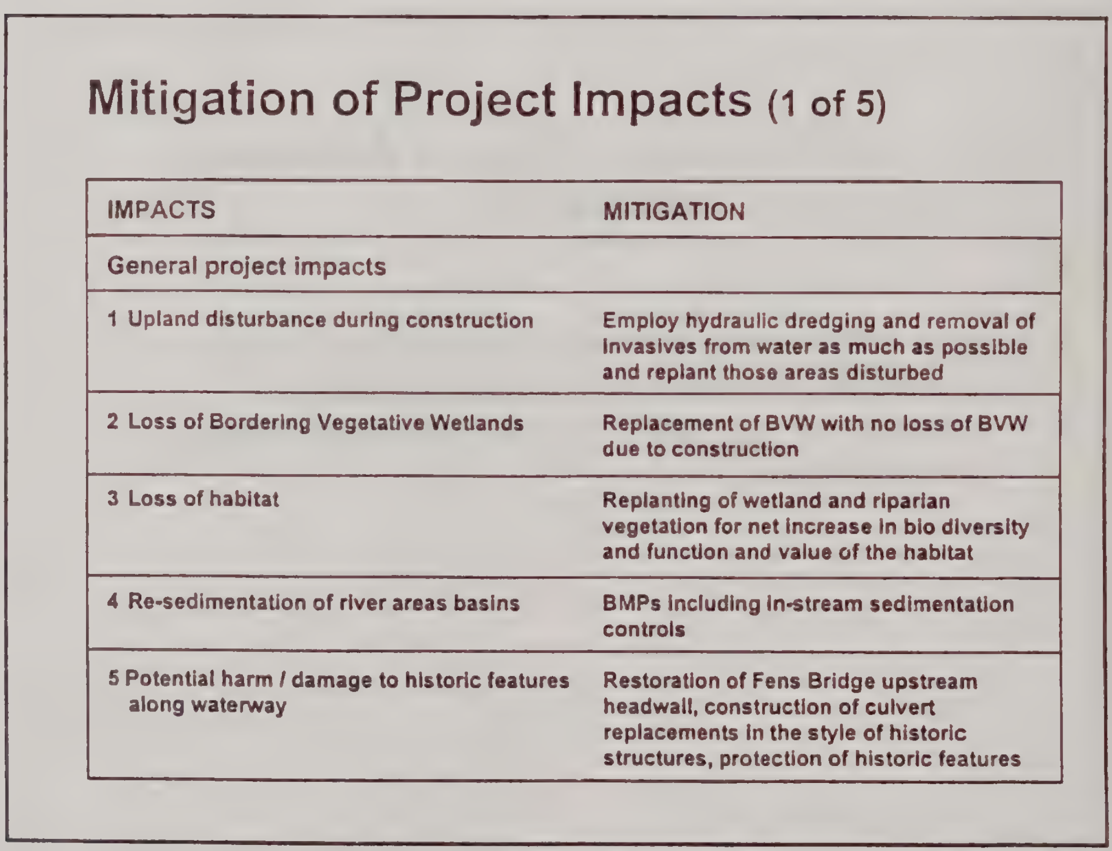

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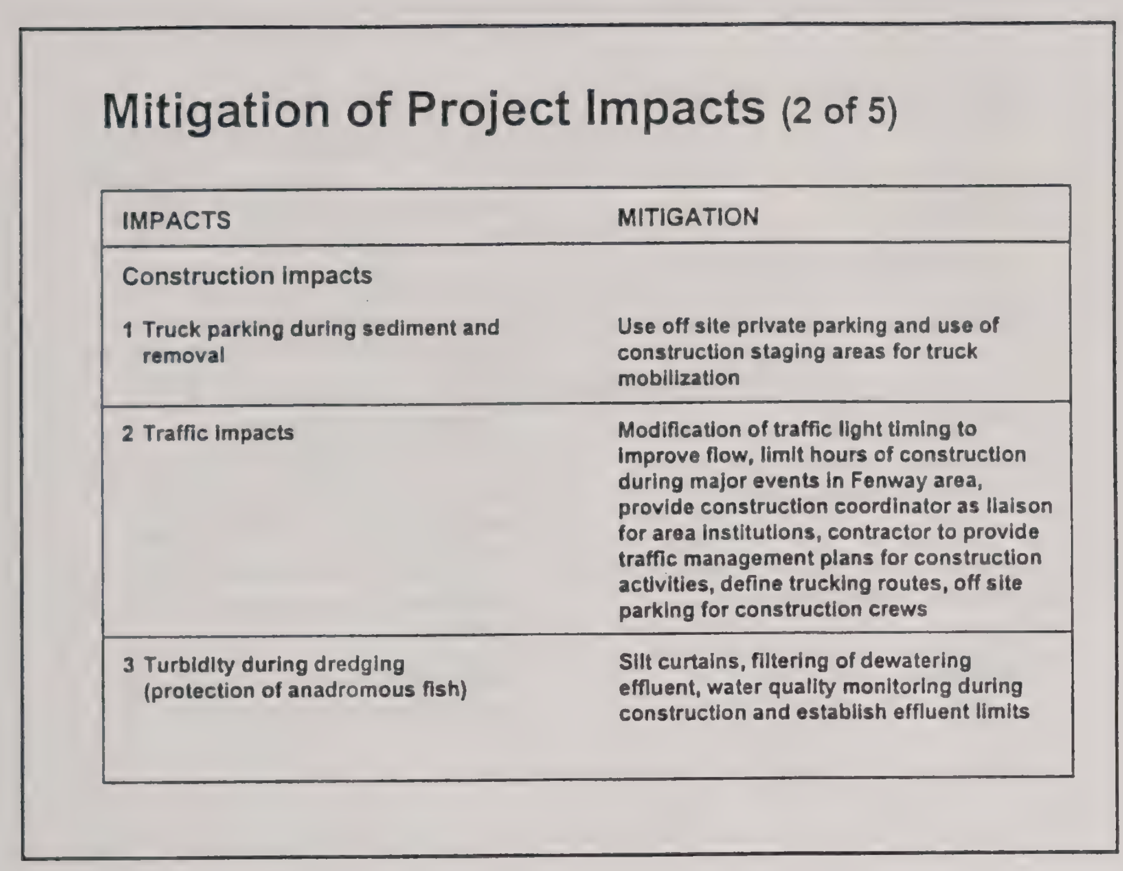

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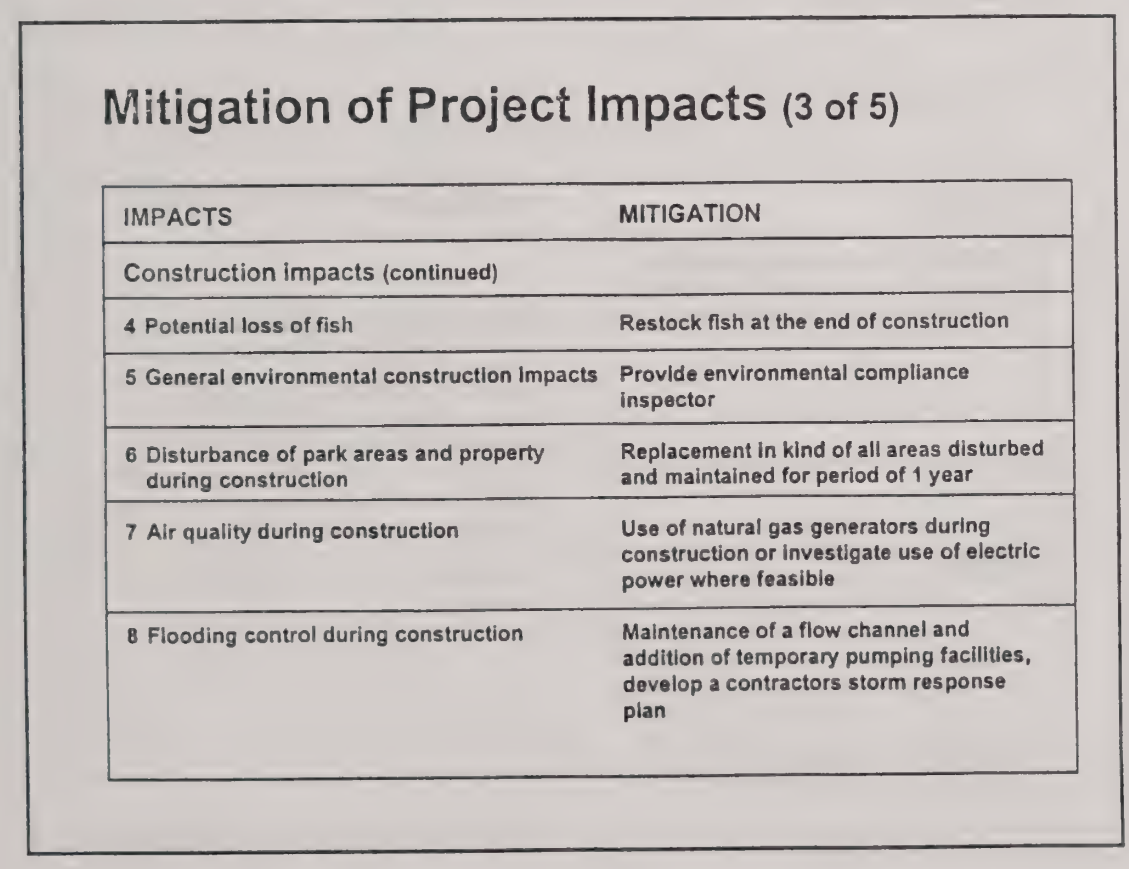

Mitigation of Project Impacts (3 of 5)

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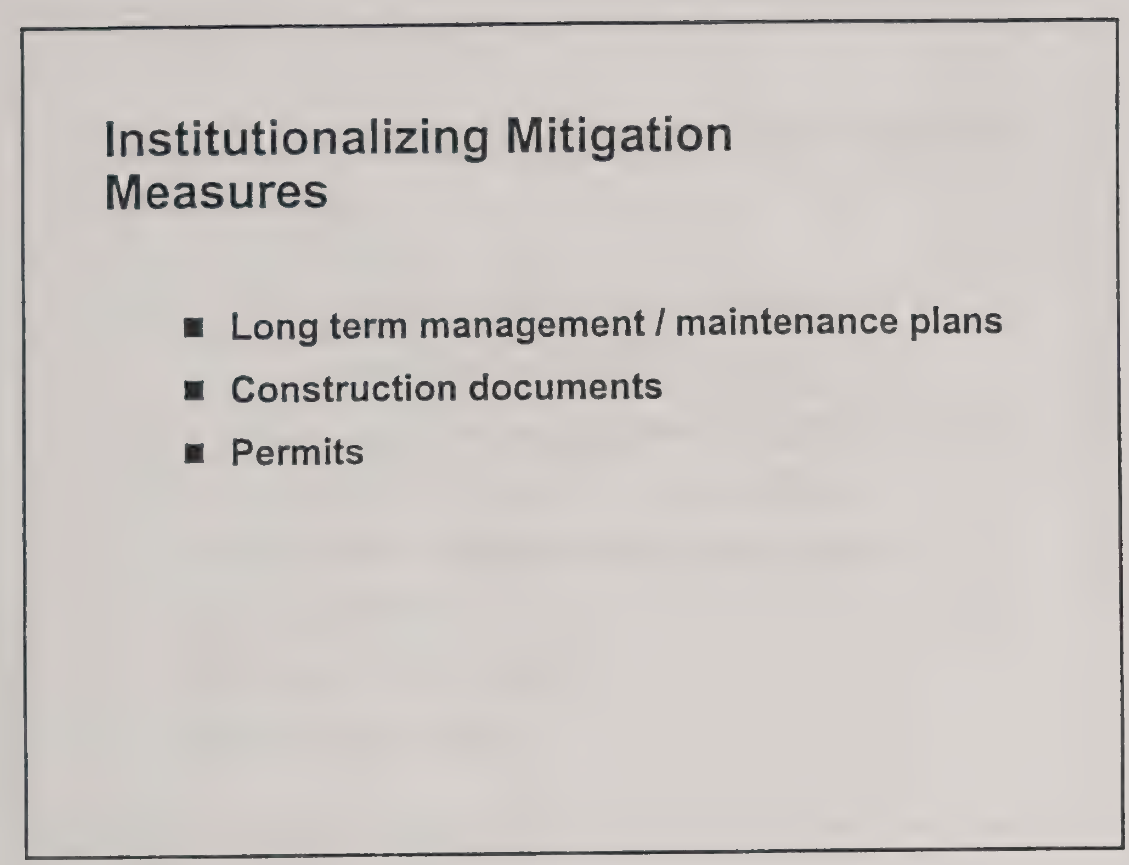
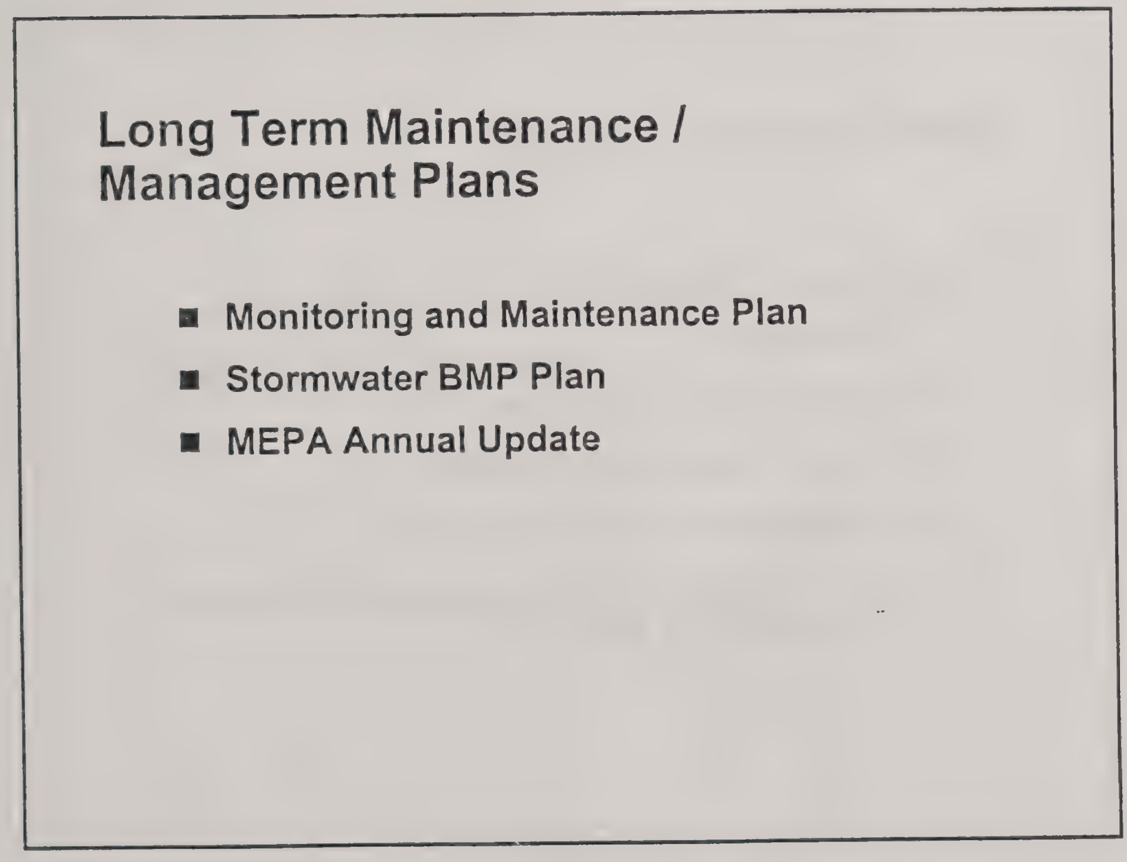
15 Odors	Cover dewatering equipment if necessary, maintain control foam on site
16 Visual	Include wind curtains on staging area fencing



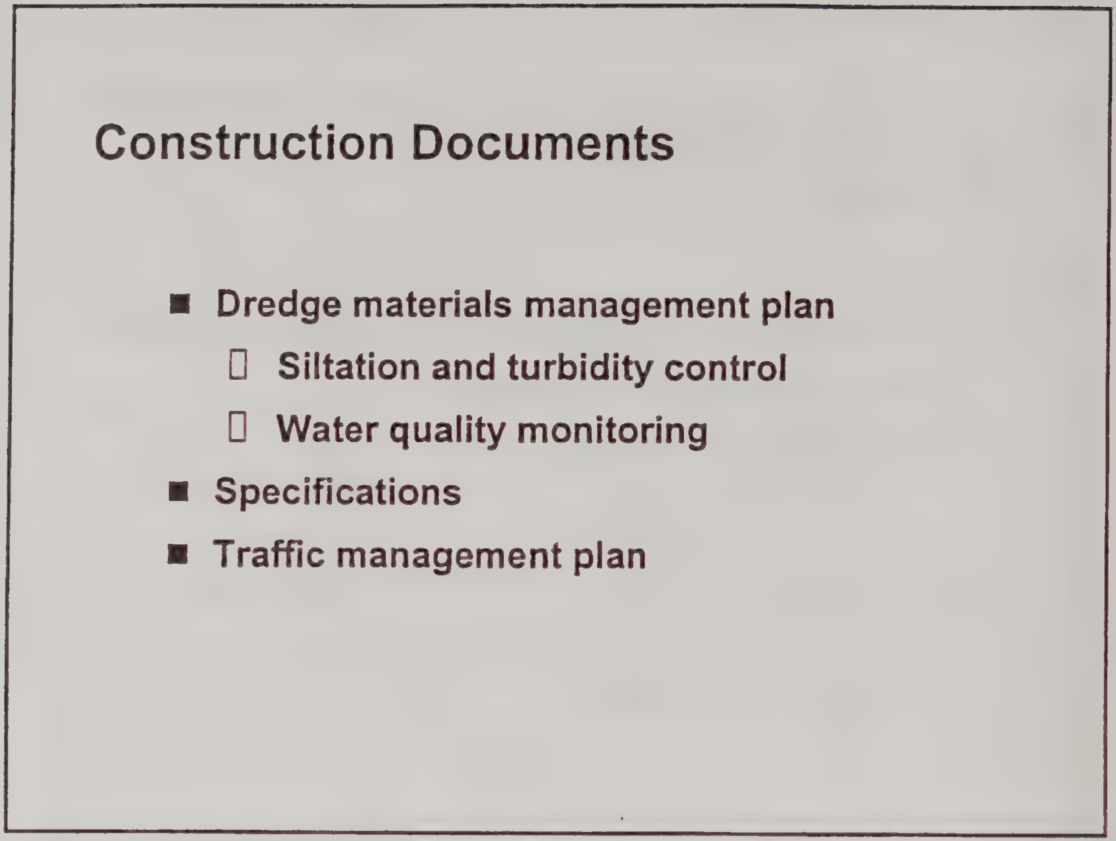
Institutionalizing Mitigation Measures

- Long term management / maintenance plans
- Construction documents
- Permits



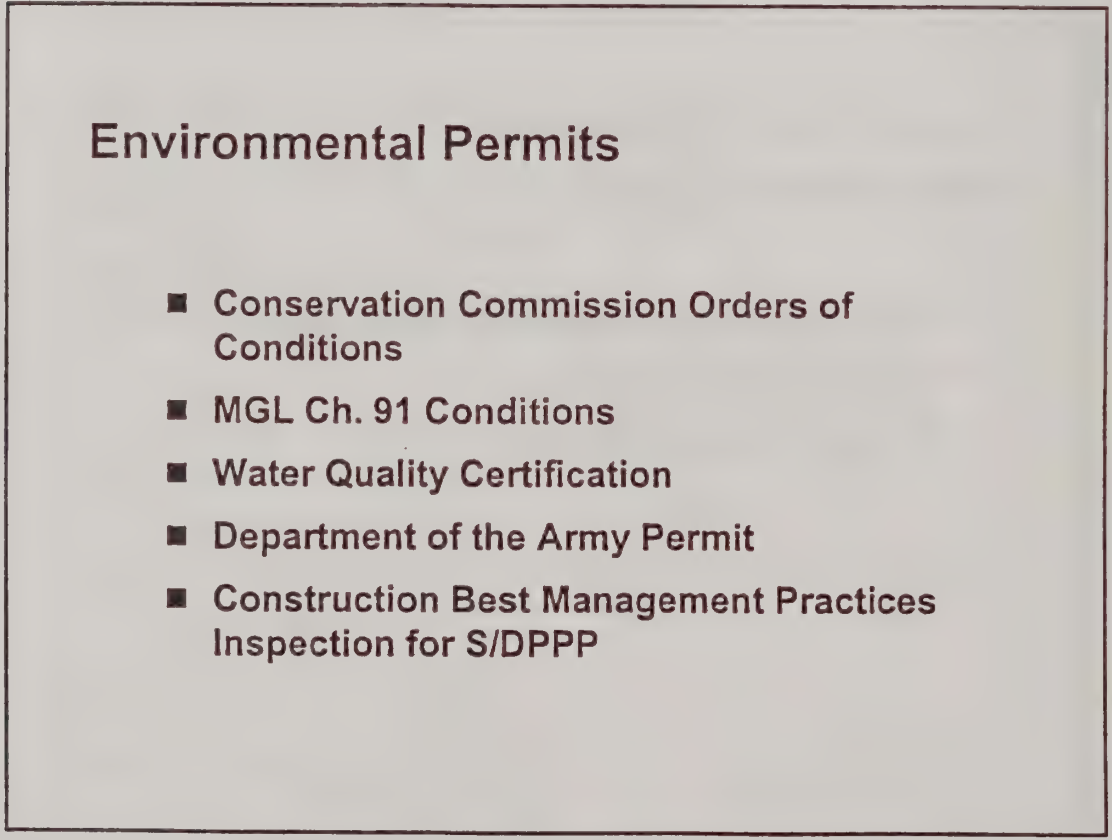
Long Term Maintenance / Management Plans

- Monitoring and Maintenance Plan
- Stormwater BMP Plan
- MEPA Annual Update



Construction Documents

- Dredge materials management plan
    - Siltation and turbidity control
    - Water quality monitoring
- Specifications
- Traffic management plan



Environmental Permits

- Conservation Commission Orders of Conditions
- MGL Ch. 91 Conditions
- Water Quality Certification
- Department of the Army Permit
- Construction Best Management Practices Inspection for S/DPPP

Environmental Compliance Monitoring

- Project Proponent Funded Position
- Best Management Practices Inspection Program for Stormwater / Drainage Pollution Prevention Program
- Air Quality / Dust Control
- Noise Control
- Pedestrian Access
- Rodent Control

MEPA Annual Update

Questions and Answers

ATTACHMENT 3

SCOPE OF THE MEPA ANNUAL UPDATE

1.0 General

- Project Description

- Provide a list and description of work and its Project Phase that was accomplished in the previous year under each of the Project Objectives. Also include deferred work.

    -Flood control
    -Water quality improvement
    -Habitat enhancement
    -Historic rehabilitation

- Provide a list and description of work and its Project Phase that is to be conducted in the following year including deferred work for each of the Project Objectives.

    -Flood control
    -Water quality improvement
    -Habitat enhancement
    -Historic rehabilitation

2.0 Environmental Mitigation Plan

- Describe the environmental impacts that are anticipated in the following year's work for each of the Project Objectives.

  -Flood control
  -Water quality improvement
  -Habitat enhancement
  -Historic rehabilitation

- Provide a description of the success of the Environmental Mitigation Program and how it is or is not meeting the Project Objectives.

- Describe any modifications to the Environmental Mitigation Plan that would make it work better.

3.0 Management and Maintenance Plan

- Describe any changes that have taken place to the Emerald Necklace management structure over the past year.

- Provide a tabular summary of the effectiveness and success of the growth of trees shrubs and wetland plantings.

- Has there been any observed decrease or increase in fish and wildlife usage of the Project area?

- Describe the success of the Management and Maintenance Plan in controlling the re-establishment of invasive vegetation.

- Where there was a lack of success (<80%), describe the reasons and propose modifications intended to address this shortfall.

- Candidly describe any short-comings and recommendations for the Management and Maintenance Plan.

4.0 Best Management Practices Plan

- List all BMP stormwater activities that have taken place during the previous year as well as those which were deferred.

- List all BMP activities that are planned for the following year.

- Provide an accounting of sand that was applied to roadways the previous year and sand that was picked up through street sweeping and catch basin cleaning.

- Also include the volume (weight) of sand that was removed from each of the grit separator type devices in the watershed.

- Have there been any problems with BMP enforcement over the previous year and what are the corrective actions?

5.0 Environmental Permits and Approvals

- Provide a working list of all environmental permits and approvals that are required to implement to following year's activities.

- Describe any amendments to, or additional permits and approvals that are needed to implement the following year's work.

6.0 Funding and Schedule

- Describe the funding status and implementation schedule for the following year's work.

7.0 Response to Agency and Public Comments

- Provide a summary of responses to public comments that were received on the previous public document and a summary of public outreach efforts during the previous year.

December 2, 2000

Public Information Meeting

Fenway Garden Society

----Repeated November 8, 2000 Presentation----

Fenway Garden Society
PO Box 230038, Astor Station, Boston, MA 02123 Phone: 617.267.6650

Ms. Fran Beatty
Sr. Landscape Architect for Historic Parks
Boston Parks and Recreation Dept.
1010 Massachusetts Ave., 3rd Floor
Boston, MA 02118

Dear Fran,

On behalf of the Fenway Garden Society I want to thank you and Bruce Conklin for coming to our general meeting on December 2, 2000 to give us that wonderful presentation on the Muddy River restoration project, especially at 10:00 a.m. on such a cold wintry morning.

As you know, over the years, many ideas have been bandied about as to how best address the deterioration of the river and particularly the phragmites that abut the gardens. The presentation gave everyone a more comprehensive understanding of the problems and needed solutions that will be addressed in the restoration.

You have no idea how pleased everyone was. Some of the most skeptical gardeners came to me and expressed their delight and gratitude. We had a very good turnout, over 45 people, which I believe is a sign of everyone's interest in the subject..

Thank you once again,

Sincerely,

Marian Sabal

Marian Sabal 1/23/01
(former) President

MEMORANDUM

DATE: January 17, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Upcoming Meeting Schedule; Other Information

Schedule of Upcoming Meeting

No.	**Day**	**Date**	**Time**	**Topic(s)**	**Location**
14	Thur.	25-Jan-2001	6 PM	❖ Overview of Historic Preservation Components of Project; ❖ Cost Estimate; ❖ Discussion of CAC Review of Draft EIR; ❖ Dates for Upcoming CAC Meetings	Egan Center, NU

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

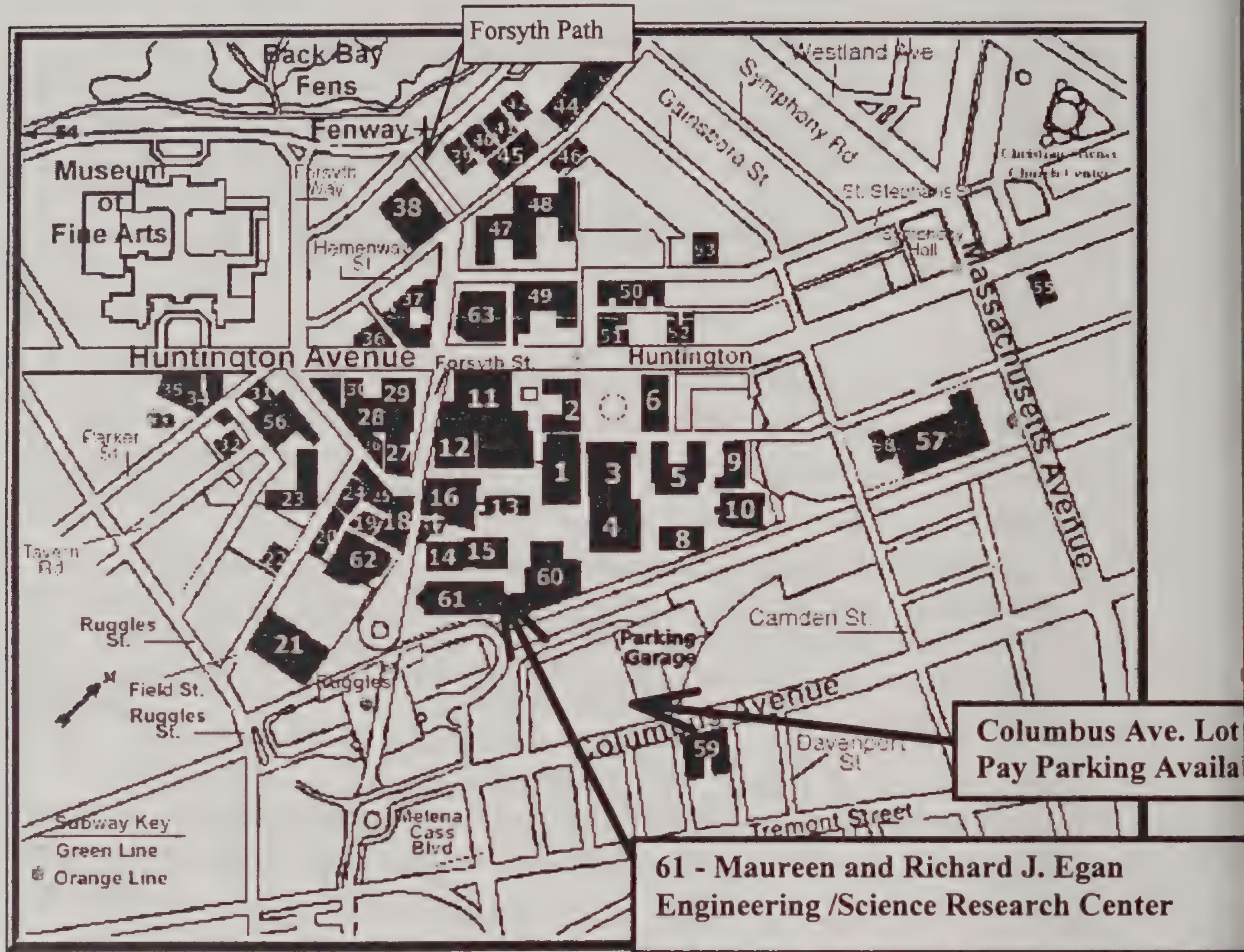
If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to

Maureen and Richard J. Egan Engineering /Science Research Center

Raytheon Amphitheater -- Room 240

NORTHEASTERN UNIVERSITY CAMPUS



Forsyth Path

Columbus Ave. Lot
Pay Parking Availa

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee
Northeastern University, Egan Engineering /Science Research Center
Raytheon Amphitheater — Room 240

Thursday, January 25, 2001
6:00p.m. - 8:30p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:20

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

***John Burckardt**, PE, Project Manager*

***Fran Beatty, ALSA,** Senior Landscape Architect for Historic Parks*
Boston Parks & Recreation Department

II. **Project Update – Consultant's Report** 6:20 – 6:30

***Bruce R. Conklin, PE,** Vice President*
Camp Dresser & McKee Inc.

III. **Presentation: Overview of Project Elements and Construction Cost Estimate** 6:30 – 7:10

***Bruce R. Conklin, PE,** Vice President*
Camp Dresser & McKee Inc.

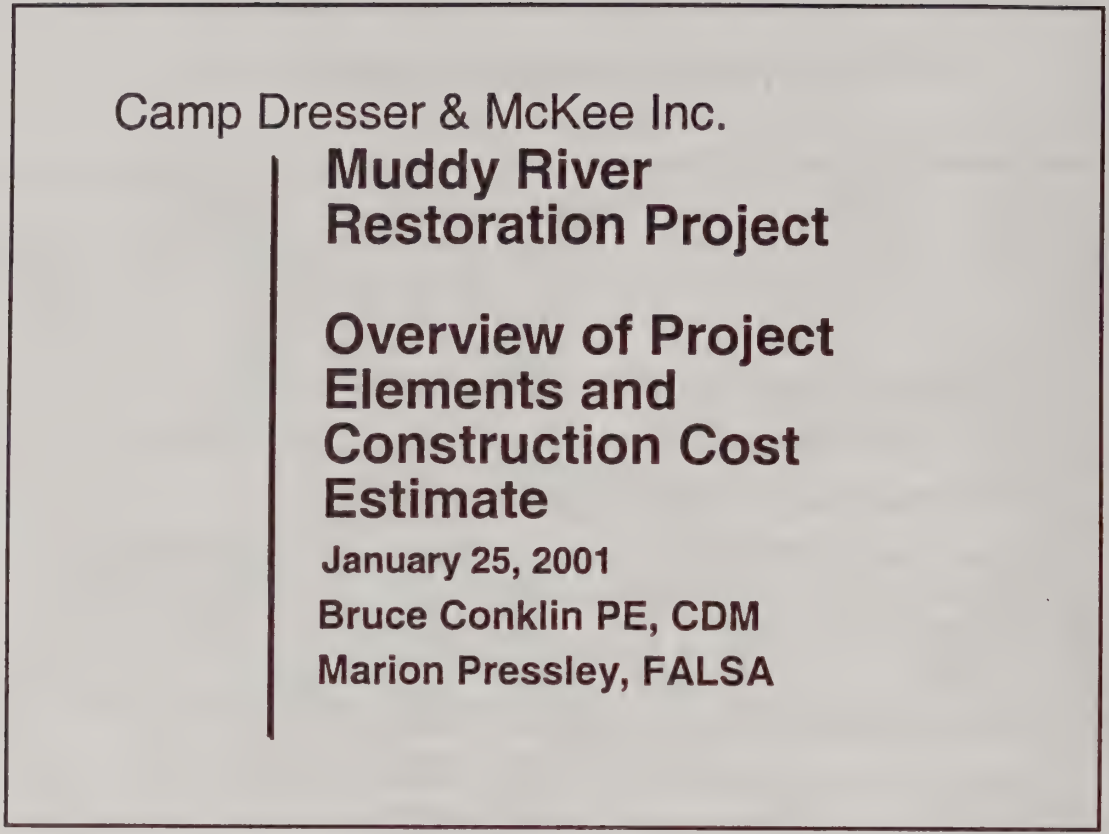
***Marion Pressley, FALSA,** President*
Pressley Associates, Inc.

Q&A/Discussion with CAC 7:10 – 8:10

IV. **Meeting Schedule Update & CAC Comment Process** 8:10 – 8:20

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

V. **Questions and Answers (General Public) Wrap Up** 8:20 – 8:30



Camp Dresser & McKee Inc.

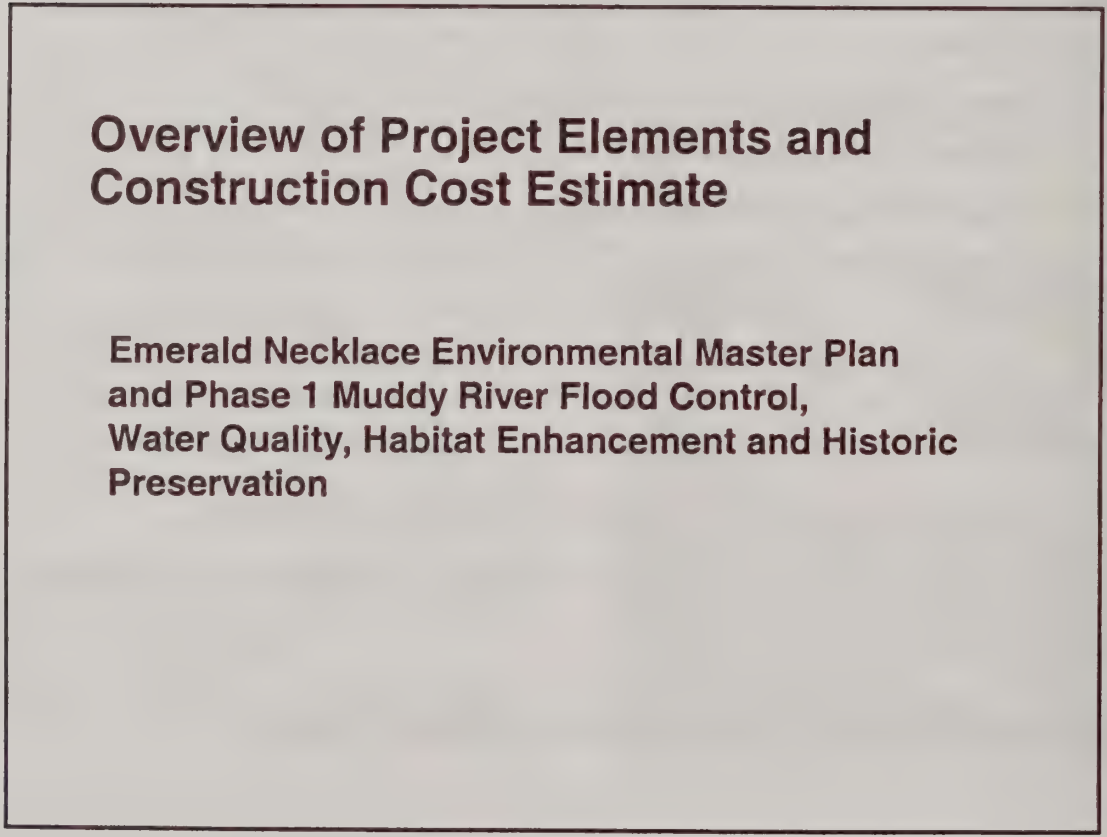
Muddy River Restoration Project

Overview of Project Elements and Construction Cost Estimate

January 25, 2001

Bruce Conklin PE, CDM

Marion Pressley, FALSA



Overview of Project Elements and Construction Cost Estimate

Emerald Necklace Environmental Master Plan and Phase 1 Muddy River Flood Control, Water Quality, Habitat Enhancement and Historic Preservation

Project Objectives

Improve water quality

Provide flood control

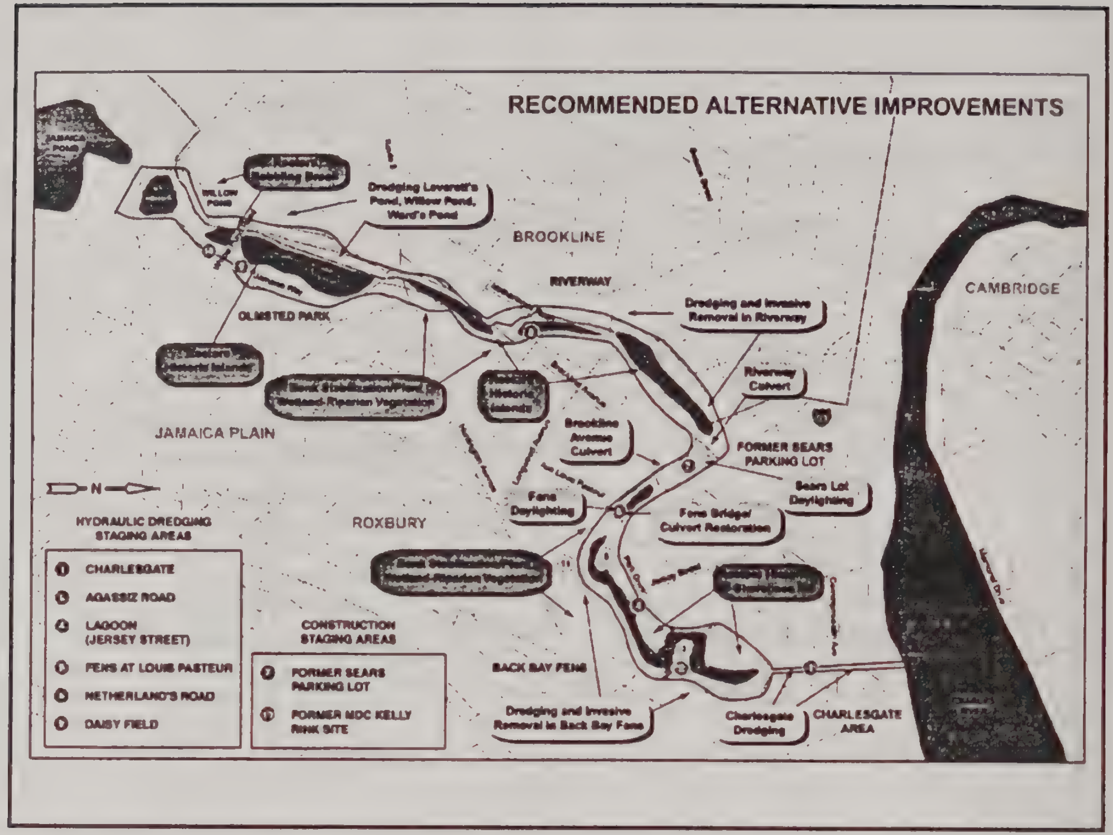
Restore landscape and historic resources

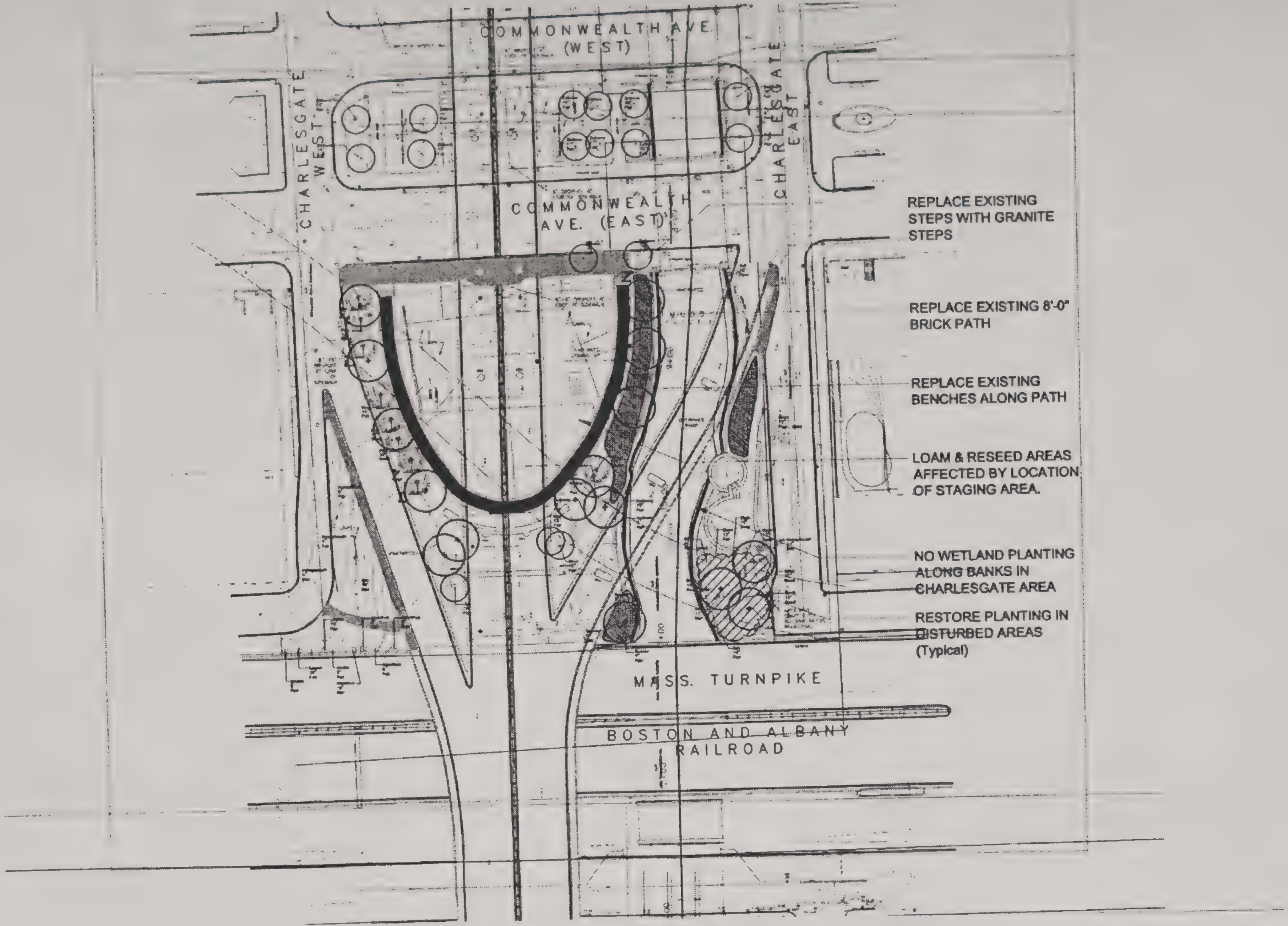
Institute Best Management Practices (BMPs) in the Muddy River system

Enhance aquatic/riparian habitat

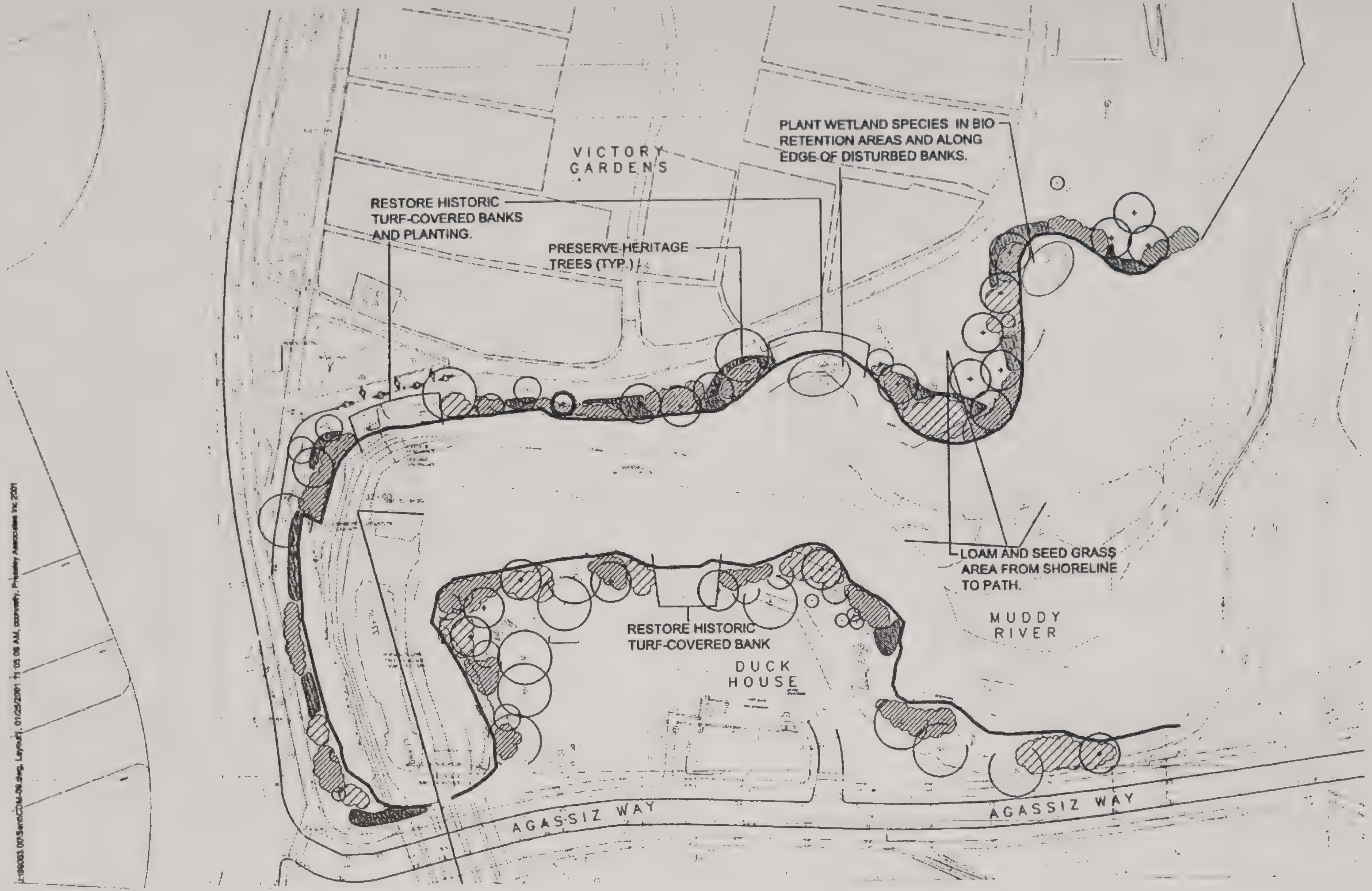
Estimate Project Cost

Charlesgate	$ 1,915,000
Back Bay Fens	47,033,000
Riverway	9,048,000
Leverett Pond	6,126,000
Willow Pond	2,097,000
Ward's Pond	3,904,000
Engineering	8,900,000
Structural BMPs	11,255,000
Charlesgate Surface Redesign & Reconstruction	525,000
Program Management Costs	800,000
Total	$91,603,000

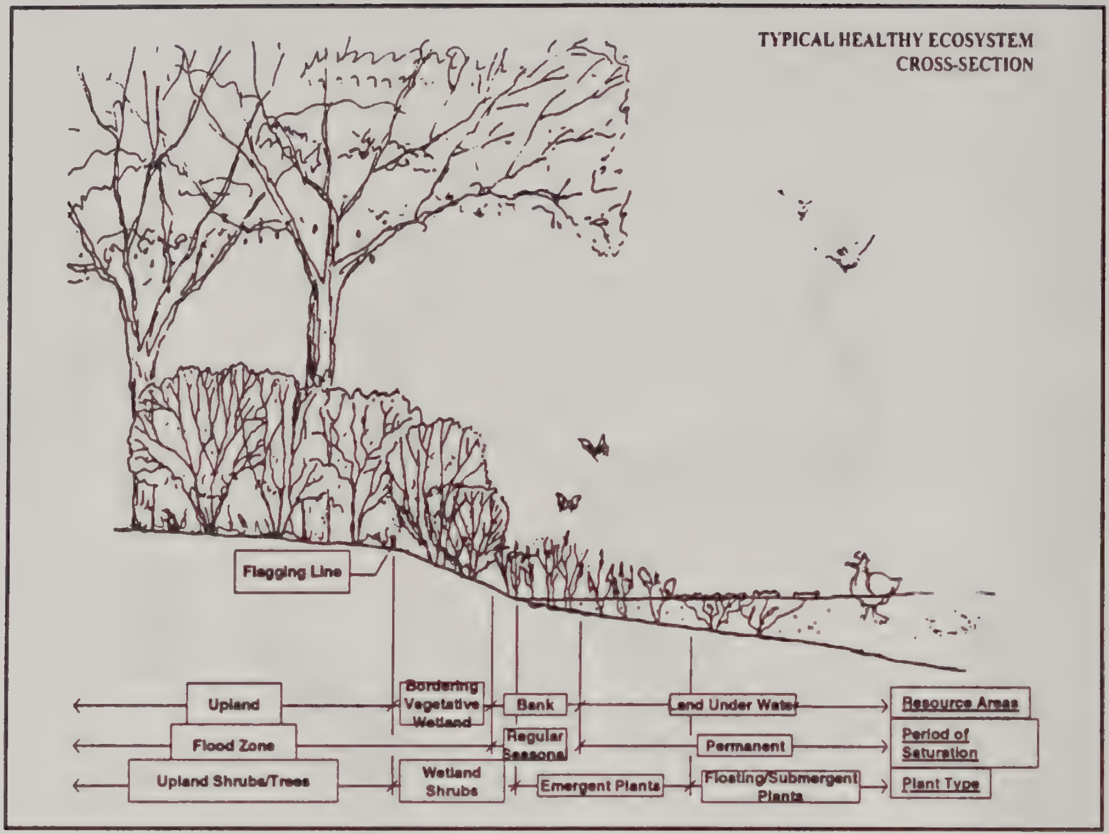

RECOMMENDED ALTERNATIVE IMPROVEMENTS
JAMAICA POND
WILLOW POND
Dredging Leverett's Pond, Willow Pond, Ward's Pond
BROOKLINE
RIVERWAY
OLMSTED PARK
Dredging and Invasive Removal in Riverway
CAMBRIDGE
Riverway Culvert
Brookline Avenue Culvert
JAMAICA PLAIN
FORMER SEARS PARKING LOT
Sears Lot Daylighting
N
Fens Daylighting
Fens Bridge/ Culvert Restoration
HYDRAULIC DREDGING STAGING AREAS
ROXBURY
CHARLESGATE
AGASSIZ ROAD
LAGOON (JERSEY STREET)
FENS AT LOUIS PASTEUR
NETHERLAND'S ROAD
DAISY FIELD
CONSTRUCTION STAGING AREAS
FORMER SEARS PARKING LOT
FORMER MDC KELLY RINK SITE
BACK BAY FENS
Dredging and Invasive Removal in Back Bay Fens
Charlesgate Dredging
CHARLESGATE AREA

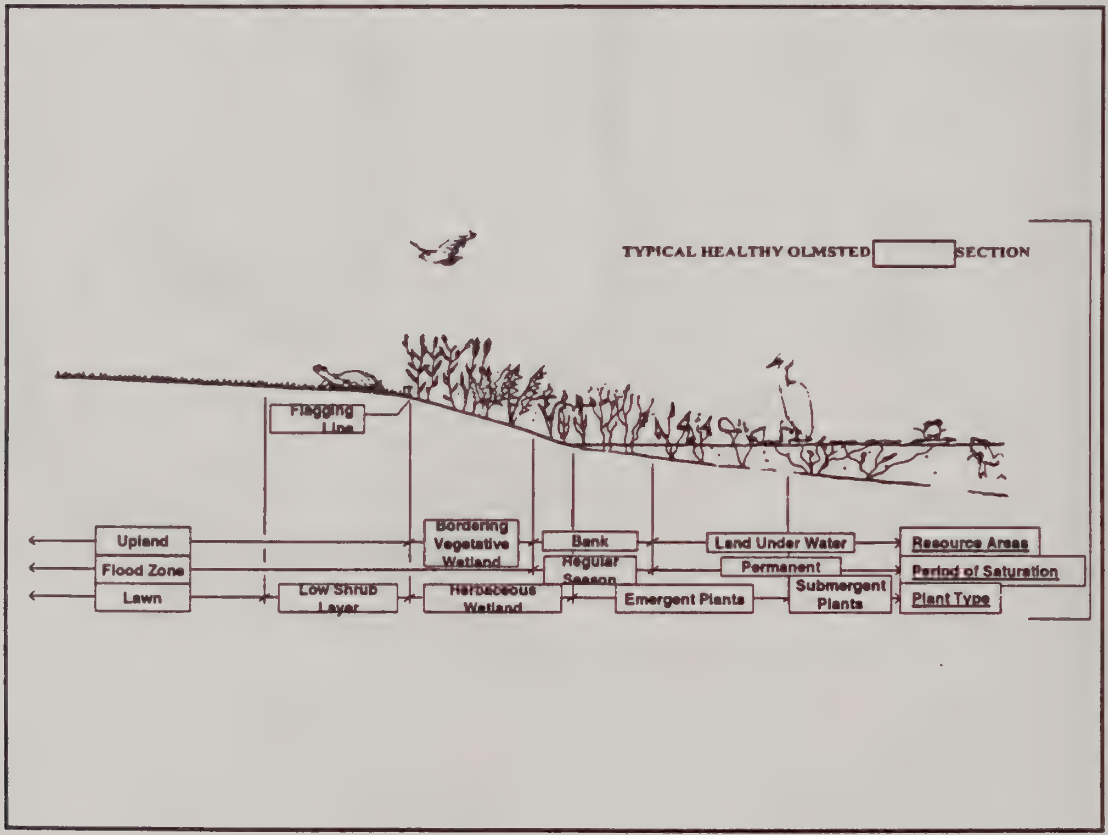

COMMONWEALTH AVE. (WEST)
CHARLESGATE WEST
CHARLESGATE EAST
COMMONWEALTH AVE. (EAST)
REPLACE EXISTING STEPS WITH GRANITE STEPS
REPLACE EXISTING 8'-0" BRICK PATH
REPLACE EXISTING BENCHES ALONG PATH
LOAM & RESEED AREAS AFFECTED BY LOCATION OF STAGING AREA.
NO WETLAND PLANTING ALONG BANKS IN CHARLESGATE AREA
RESTORE PLANTING IN DISTURBED AREAS (Typical)
MASS. TURNPIKE
BOSTON AND ALBANY RAILROAD

Charlesgate


VICTORY GARDENS
RESTORE HISTORIC TURF-COVERED BANKS AND PLANTING.
PRESERVE HERITAGE TREES (TYP.)
PLANT WETLAND SPECIES IN BIO RETENTION AREAS AND ALONG EDGE OF DISTURBED BANKS.
LOAM AND SEED GRASS AREA FROM SHORELINE TO PATH.
MUDDY RIVER
RESTORE HISTORIC TURF-COVERED BANK
DUCK HOUSE
AGASSIZ WAY
AGASSIZ WAY
Layout1, 01/25/2001 11:05:08 AM, cconnelly, Pressley Associates Inc 2001

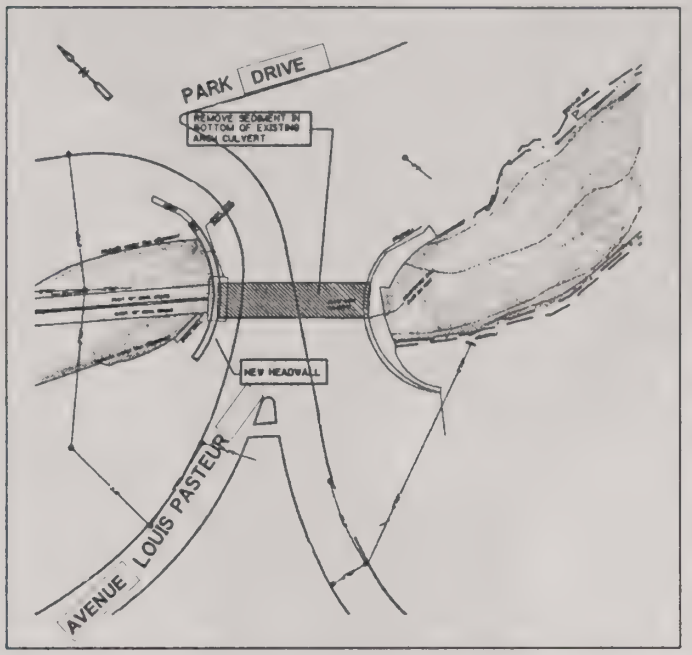
Back Bay Fens at Victory Garden


TYPICAL HEALTHY ECOSYSTEM
CROSS-SECTION
Flagging Line
Upland
Bordering Vegetative Wetland
Bank
Land Under Water
Resource Areas
Flood Zone
Regular Seasonal
Permanent
Period of Saturation
Upland Shrubs/Trees
Wetland Shrubs
Emergent Plants
Floating/Submergent Plants
Plant Type

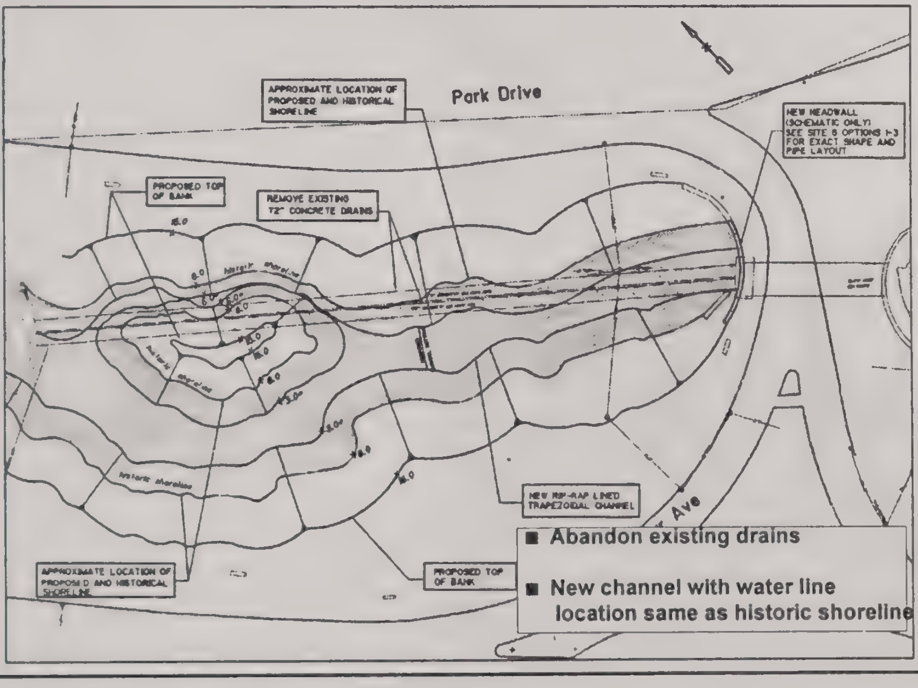

TYPICAL HEALTHY OLMSTED SECTION
Flagging Line
Upland
Bordering Vegetative Wetland
Bank
Land Under Water
Resource Areas
Flood Zone
Regular Season
Permanent
Period of Saturation
Lawn
Low Shrub Layer
Herbaceous Wetland
Emergent Plants
Submergent Plants
Plant Type

Fens Bridge

- Maintain existing arch culvert
- Dredge bottom of existing culvert
- Restore historic headwall

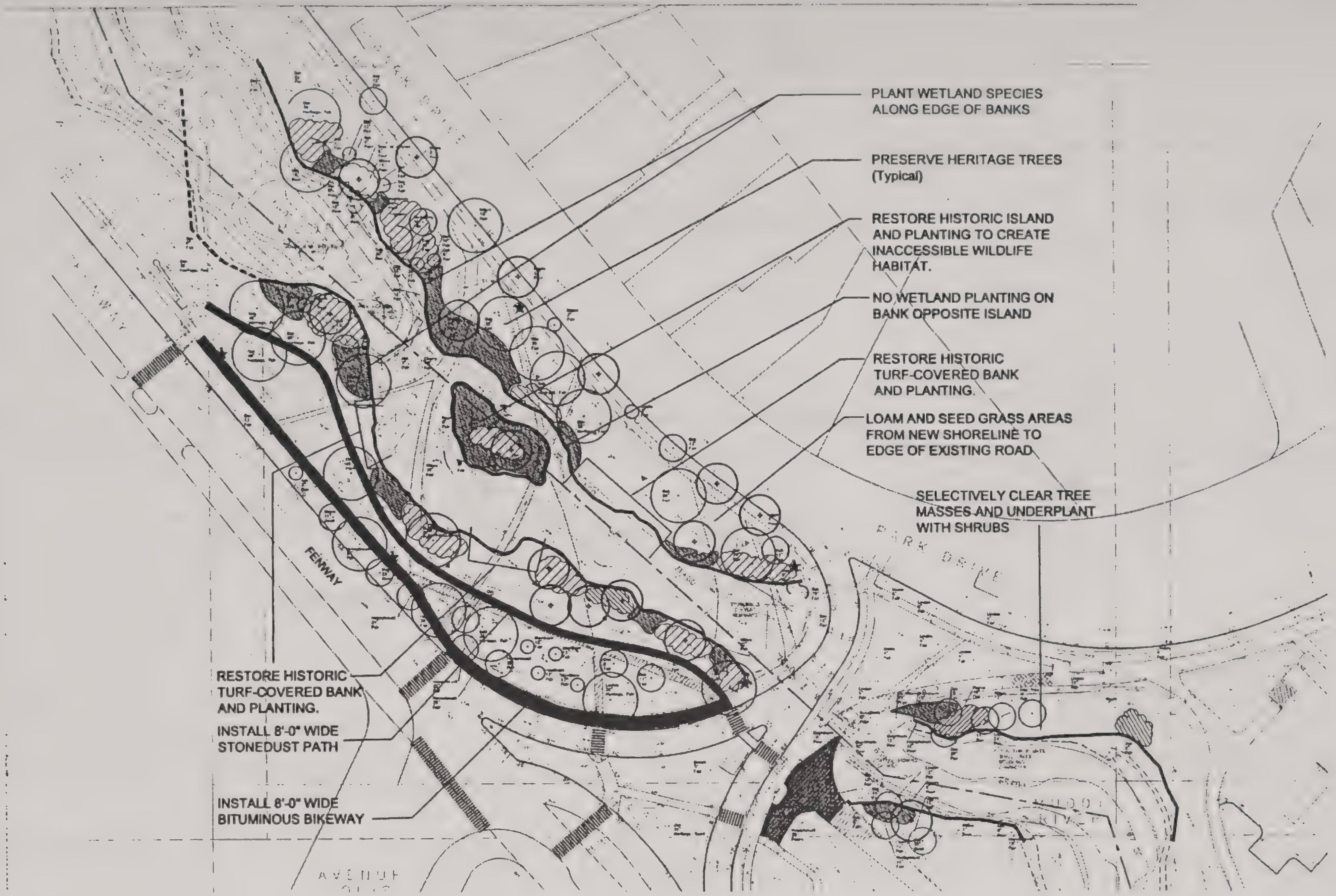


Upstream of Fens Bridge

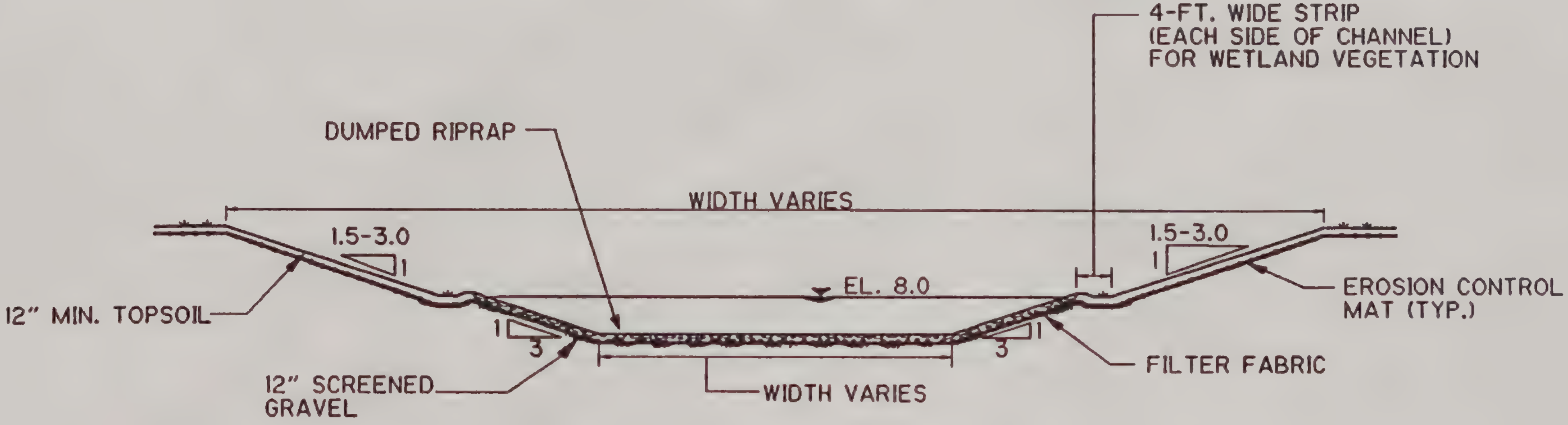

APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
Park Drive
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 8 OPTIONS 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
PROPOSED TOP OF BANK
REMOVE EXISTING 72" CONCRETE DRAINS
historic shoreline
NEW RIP-RAP LINED TRAPEZOIDAL CHANNEL
Ave
APPROXIMATE LOCATION OF PROPOSED AND HISTORICAL SHORELINE
PROPOSED TOP OF BANK

- Abandon existing drains
- New channel with water line location same as historic shoreline

Historic Island at Fens Bridge

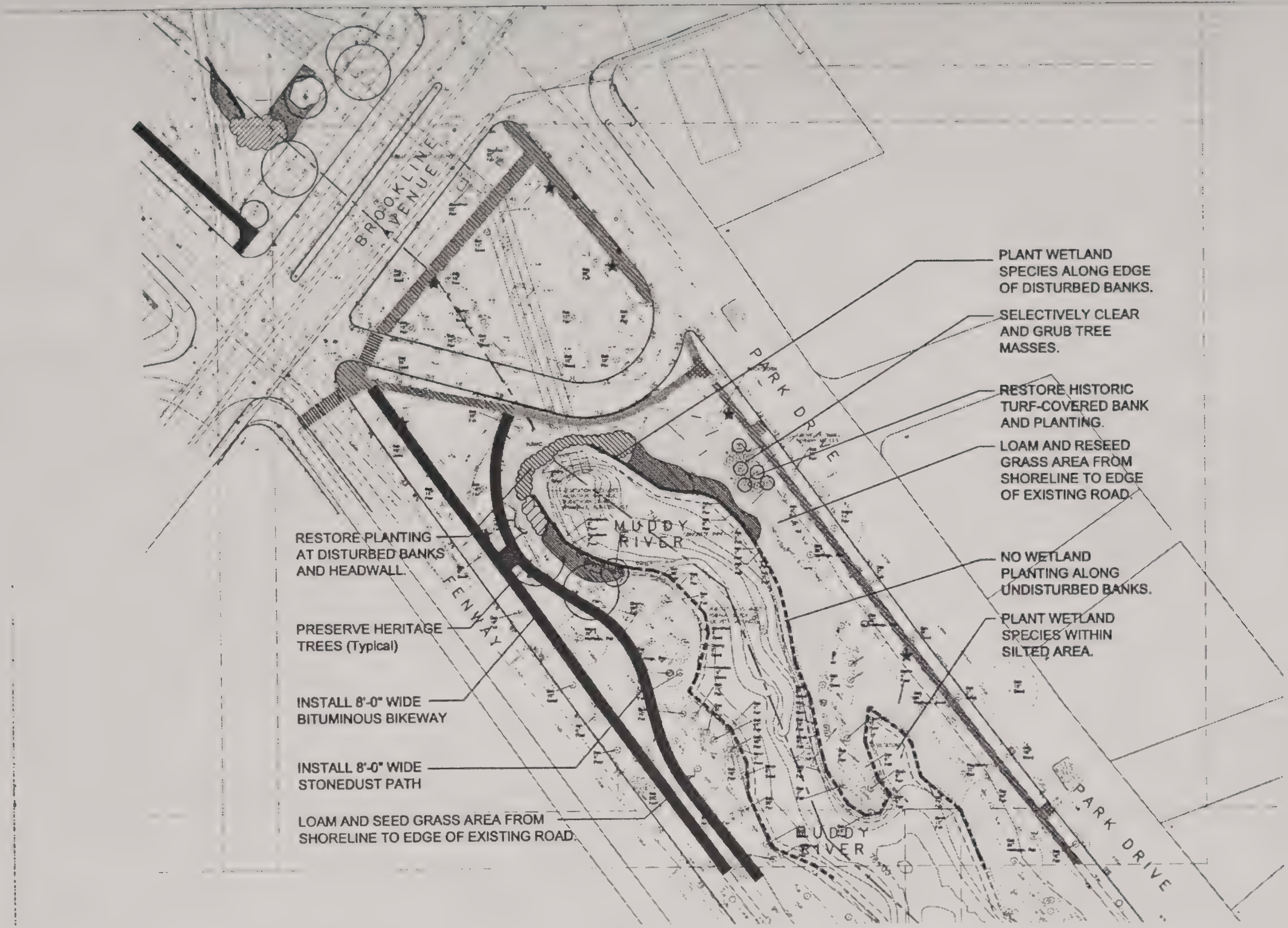

PLANT WETLAND SPECIES ALONG EDGE OF BANKS
PRESERVE HERITAGE TREES (Typical)
RESTORE HISTORIC ISLAND AND PLANTING TO CREATE INACCESSIBLE WILDLIFE HABITAT.
NO WETLAND PLANTING ON BANK OPPOSITE ISLAND
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
LOAM AND SEED GRASS AREAS FROM NEW SHORELINE TO EDGE OF EXISTING ROAD
SELECTIVELY CLEAR TREE MASSES AND UNDERPLANT WITH SHRUBS
PARK DRIVE
FENWAY
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
INSTALL 8'-0" WIDE STONEDUST PATH
INSTALL 8'-0" WIDE BITUMINOUS BIKEWAY
AVENUE

Upstream of Fens Bridge



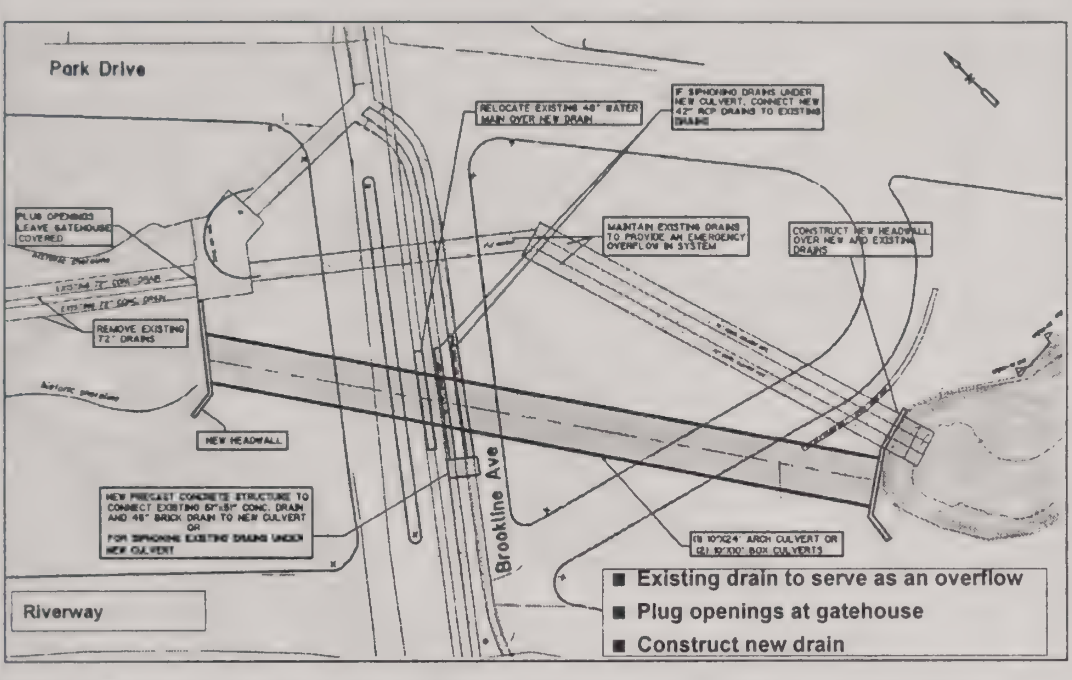
TYPICAL DAYLIGHT SECTION

SCALE: HOR. 1"=20'
VERT. 1"=20'


BROOKLINE AVENUE
PARK DRIVE
PARK DRIVE
MUDDY RIVER
MUDDY RIVER
FENWAY
PLANT WETLAND SPECIES ALONG EDGE OF DISTURBED BANKS.
SELECTIVELY CLEAR AND GRUB TREE MASSES.
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
LOAM AND RESEED GRASS AREA FROM SHORELINE TO EDGE OF EXISTING ROAD.
NO WETLAND PLANTING ALONG UNDISTURBED BANKS.
PLANT WETLAND SPECIES WITHIN SILTED AREA.
RESTORE PLANTING AT DISTURBED BANKS AND HEADWALL.
PRESERVE HERITAGE TREES (Typical)
INSTALL 8'-0" WIDE BITUMINOUS BIKEWAY
INSTALL 8'-0" WIDE STONEDUST PATH
LOAM AND SEED GRASS AREA FROM SHORELINE TO EDGE OF EXISTING ROAD.

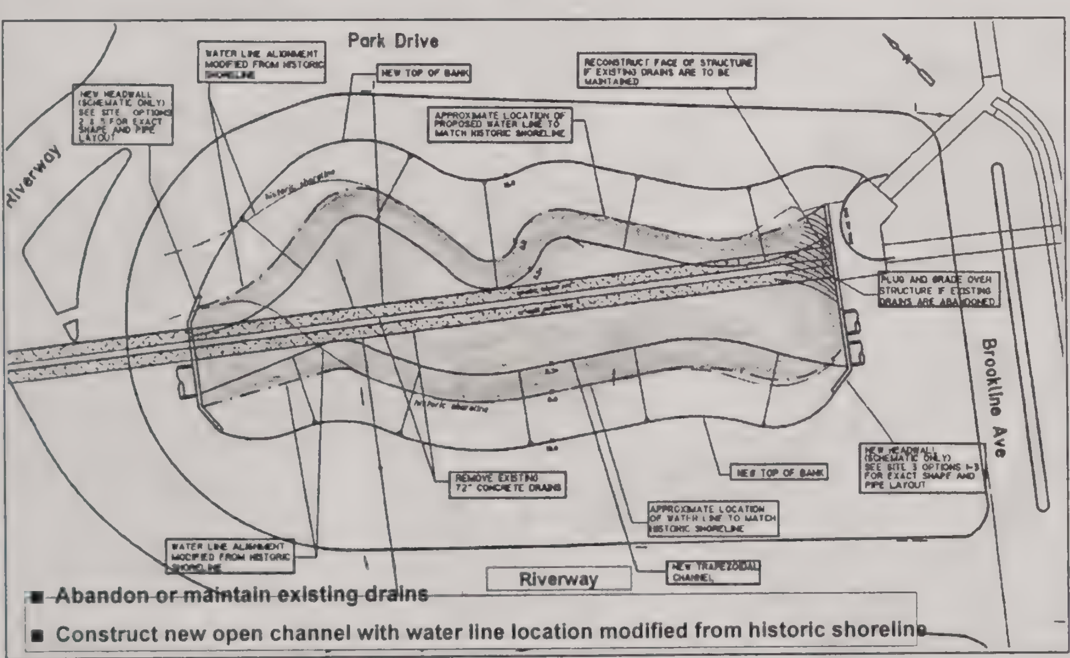
Downstream of Brookline Avenue

Brookline Avenue

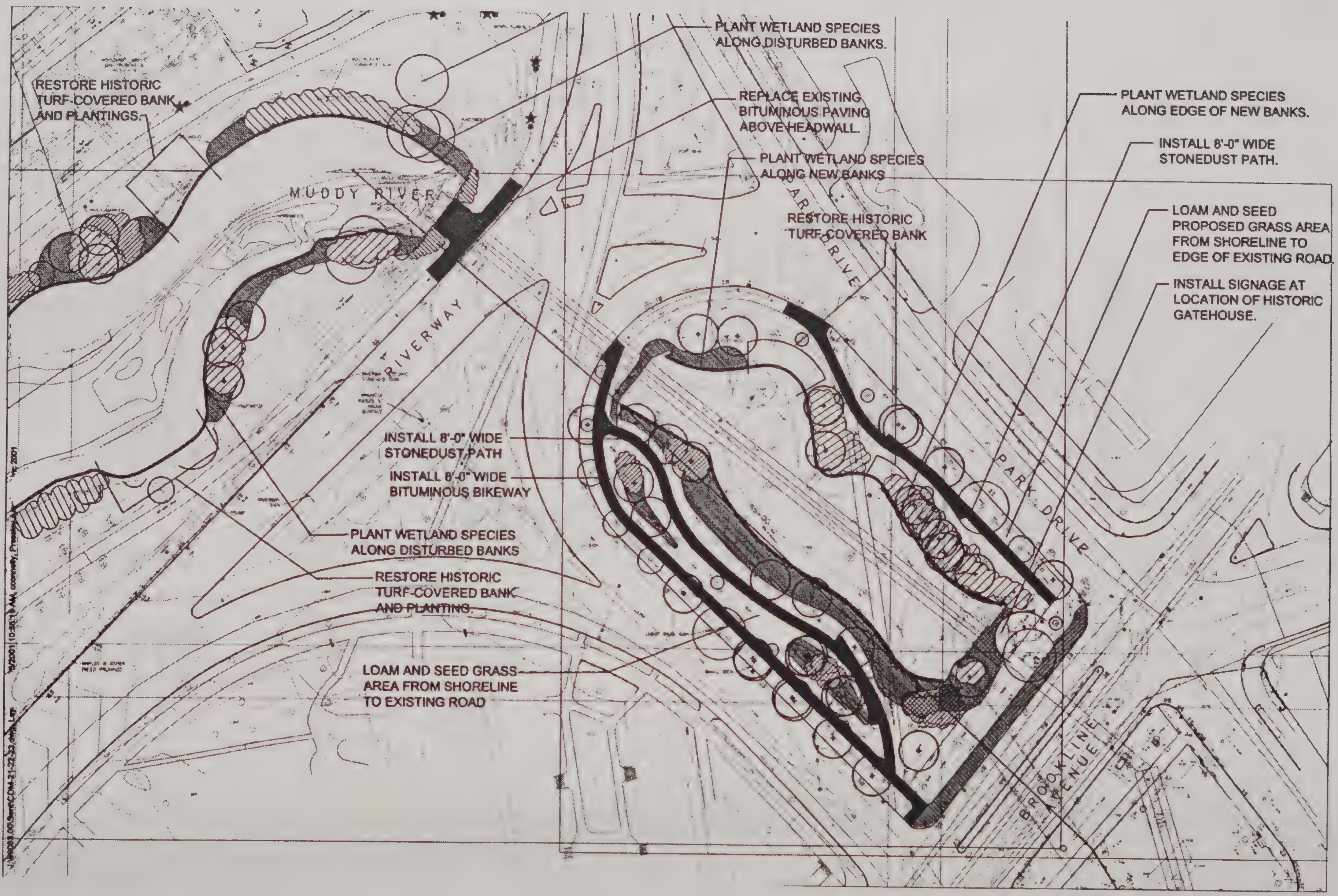

Park Drive
RELOCATE EXISTING 48" WATER MAIN OVER NEW DRAIN
IF SIPHONING DRAINS UNDER NEW CULVERT, CONNECT NEW 42" RCP DRAINS TO EXISTING DRAINS
PLUG OPENINGS LEAVE GATEHOUSE COVERED
MAINTAIN EXISTING DRAINS TO PROVIDE AN EMERGENCY OVERFLOW IN SYSTEM
CONSTRUCT NEW HEADWALL OVER NEW AND EXISTING DRAINS
historic shoreline
EXISTING 72" CONC. DRAIN
EXISTING 72" CONC. DRAIN
REMOVE EXISTING 72" DRAINS
historic shoreline
NEW HEADWALL
NEW PRECAST CONCRETE STRUCTURE TO CONNECT EXISTING 57"x51" CONC. DRAIN AND 48" BRICK DRAIN TO NEW CULVERT OR FOR SIPHONING EXISTING DRAINS UNDER NEW CULVERT
Brookline Ave
(1) 10'X24' ARCH CULVERT OR (2) 10'X10' BOX CULVERTS
Riverway

- Existing drain to serve as an overflow
- Plug openings at gatehouse
- Construct new drain

Former Sears Lot


Park Drive
WATER LINE ALIGNMENT MODIFIED FROM HISTORIC SHORELINE
NEW TOP OF BANK
RECONSTRUCT FACE OF STRUCTURE IF EXISTING DRAINS ARE TO BE MAINTAINED
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE OPTIONS 2 & 3 FOR EXACT SHAPE AND PIPE LAYOUT
APPROXIMATE LOCATION OF PROPOSED WATER LINE TO MATCH HISTORIC SHORELINE
Riverway
historic shoreline
PLUG AND GRADE OVER STRUCTURE IF EXISTING DRAINS ARE ABANDONED
Brookline Ave
historic shoreline
NEW HEADWALL (SCHEMATIC ONLY) SEE SITE 3 OPTIONS 1-3 FOR EXACT SHAPE AND PIPE LAYOUT
NEW TOP OF BANK
REMOVE EXISTING 72" CONCRETE DRAINS
APPROXIMATE LOCATION OF WATER LINE TO MATCH HISTORIC SHORELINE
WATER LINE ALIGNMENT MODIFIED FROM HISTORIC SHORELINE
NEW TRAPEZOIDAL CHANNEL
Riverway

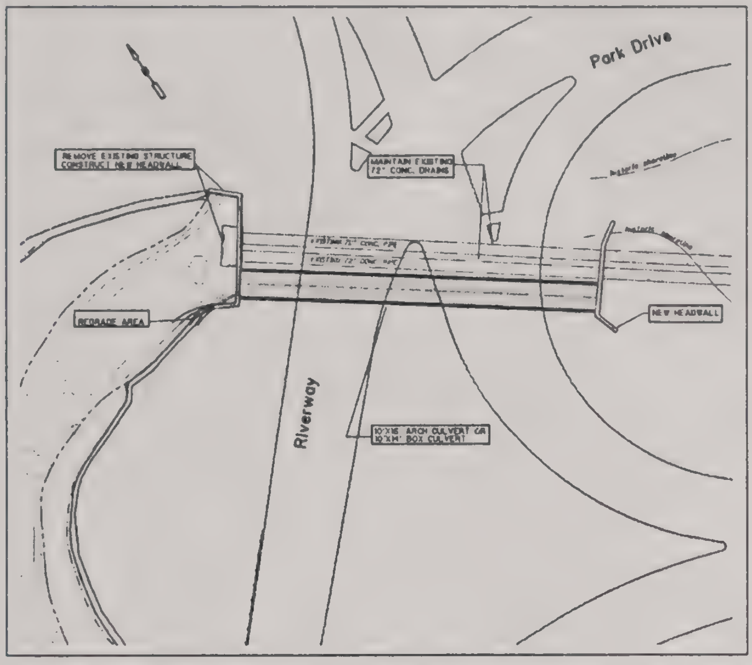
- Abandon or maintain existing drains
- Construct new open channel with water line location modified from historic shoreline


RESTORE HISTORIC TURF-COVERED BANK AND PLANTINGS.
PLANT WETLAND SPECIES ALONG DISTURBED BANKS.
REPLACE EXISTING BITUMINOUS PAVING ABOVE HEADWALL.
PLANT WETLAND SPECIES ALONG NEW BANKS
RESTORE HISTORIC TURF-COVERED BANK
PLANT WETLAND SPECIES ALONG EDGE OF NEW BANKS.
INSTALL 8'-0" WIDE STONEDUST PATH.
LOAM AND SEED PROPOSED GRASS AREA FROM SHORELINE TO EDGE OF EXISTING ROAD.
INSTALL SIGNAGE AT LOCATION OF HISTORIC GATEHOUSE.
MUDDY RIVER
RIVERWAY
PARK DRIVE
PARK DRIVE
BROOKLINE AVENUE
INSTALL 8'-0" WIDE STONEDUST PATH
INSTALL 8'-0" WIDE BITUMINOUS BIKEWAY
PLANT WETLAND SPECIES ALONG DISTURBED BANKS
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
LOAM AND SEED GRASS AREA FROM SHORELINE TO EXISTING ROAD

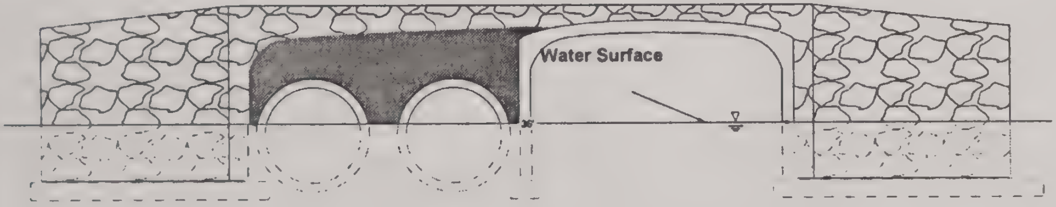
Former Sears Lot

Riverway Culvert

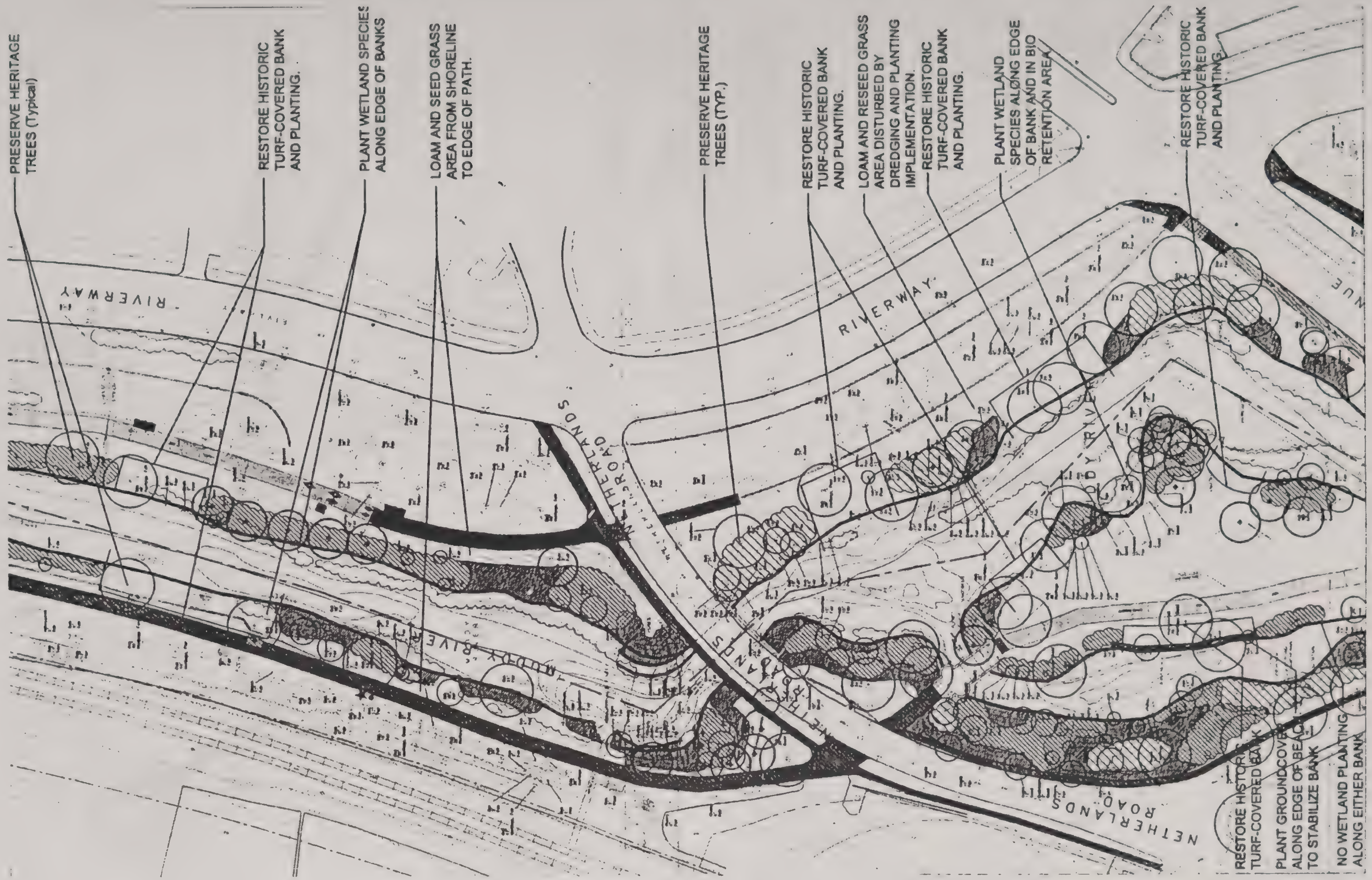
- Maintain existing drains
- Remove structure
- Construct new drain



Headwall – Single Opening

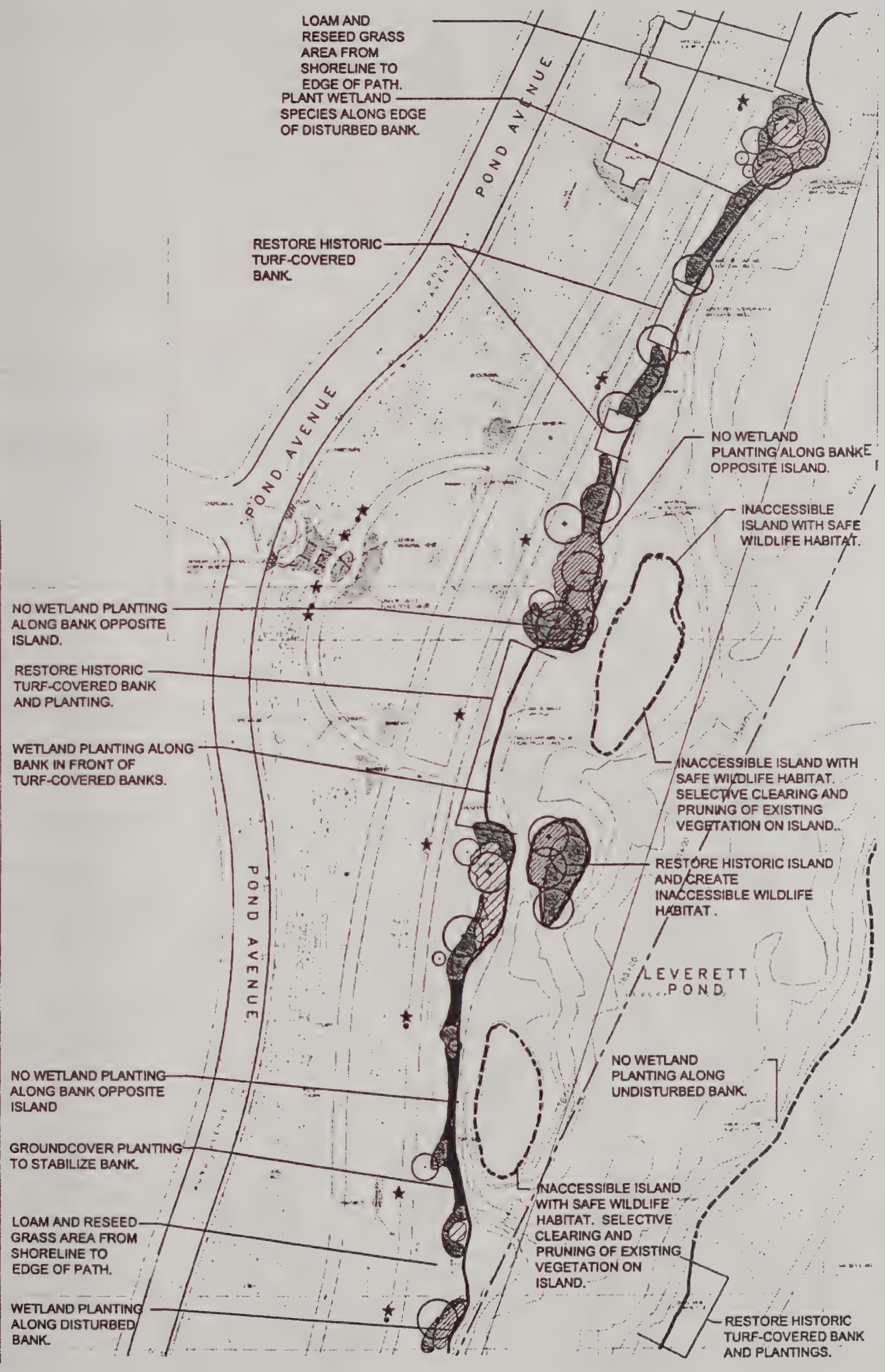


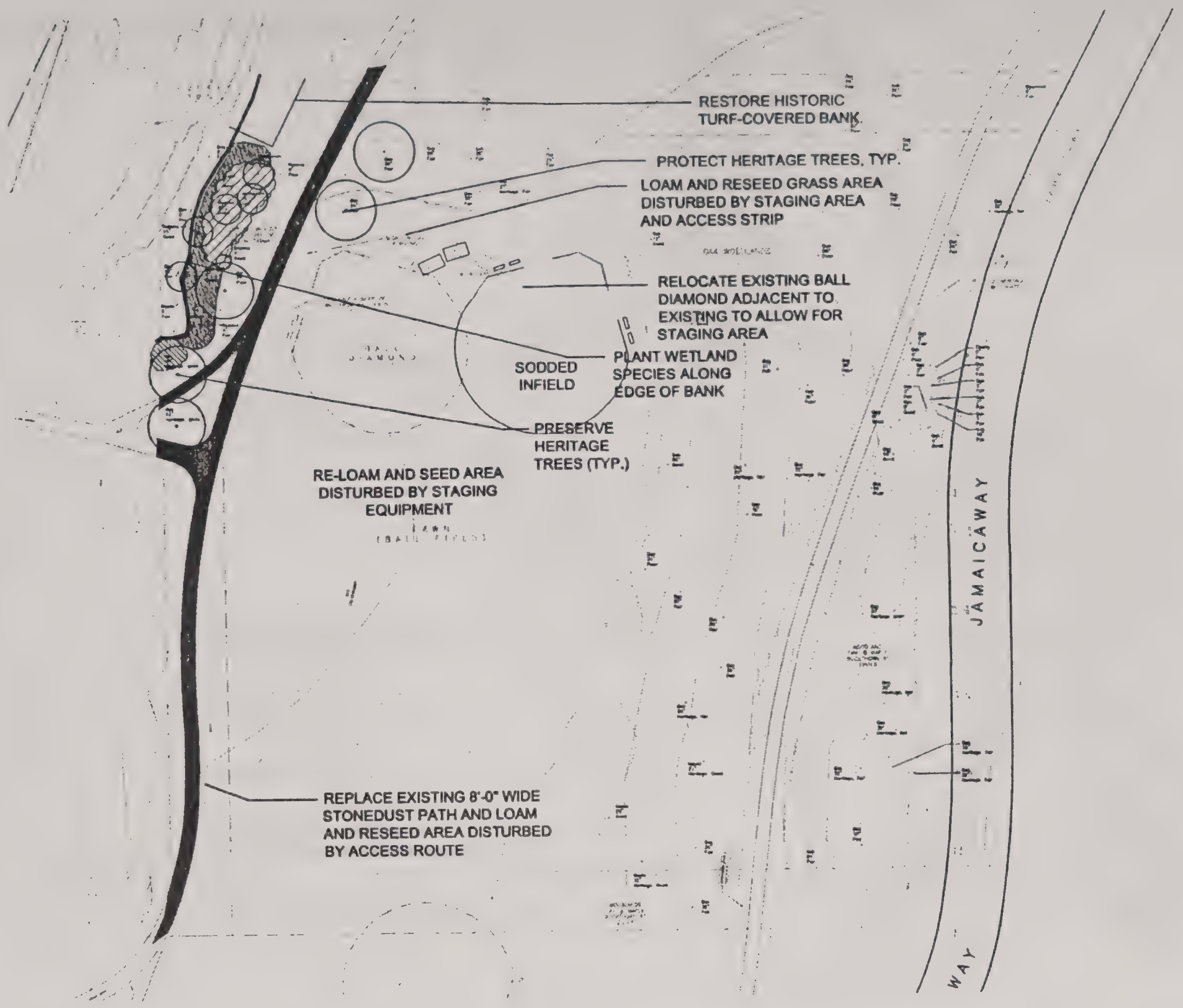
Netherlands Road


PRESERVE HERITAGE TREES (Typical)
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
PLANT WETLAND SPECIES ALONG EDGE OF BANKS
LOAM AND SEED GRASS AREA FROM SHORELINE TO EDGE OF PATH.
PRESERVE HERITAGE TREES (TYP.)
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
LOAM AND RESEED GRASS AREA DISTURBED BY DREDGING AND PLANTING IMPLEMENTATION.
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
PLANT WETLAND SPECIES ALONG EDGE OF BANK AND IN BIO RETENTION AREA
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
RIVERWAY
RIVERWAY
NETHERLANDS ROAD
NETHERLANDS ROAD
NETHERLANDS ROAD
MUDDY RIVER
RIVER
NUE
RESTORE HISTORIC TURF-COVERED BANK
PLANT GROUNDCOVER ALONG EDGE OF BEACH TO STABILIZE BANK
NO WETLAND PLANTING ALONG EITHER BANK

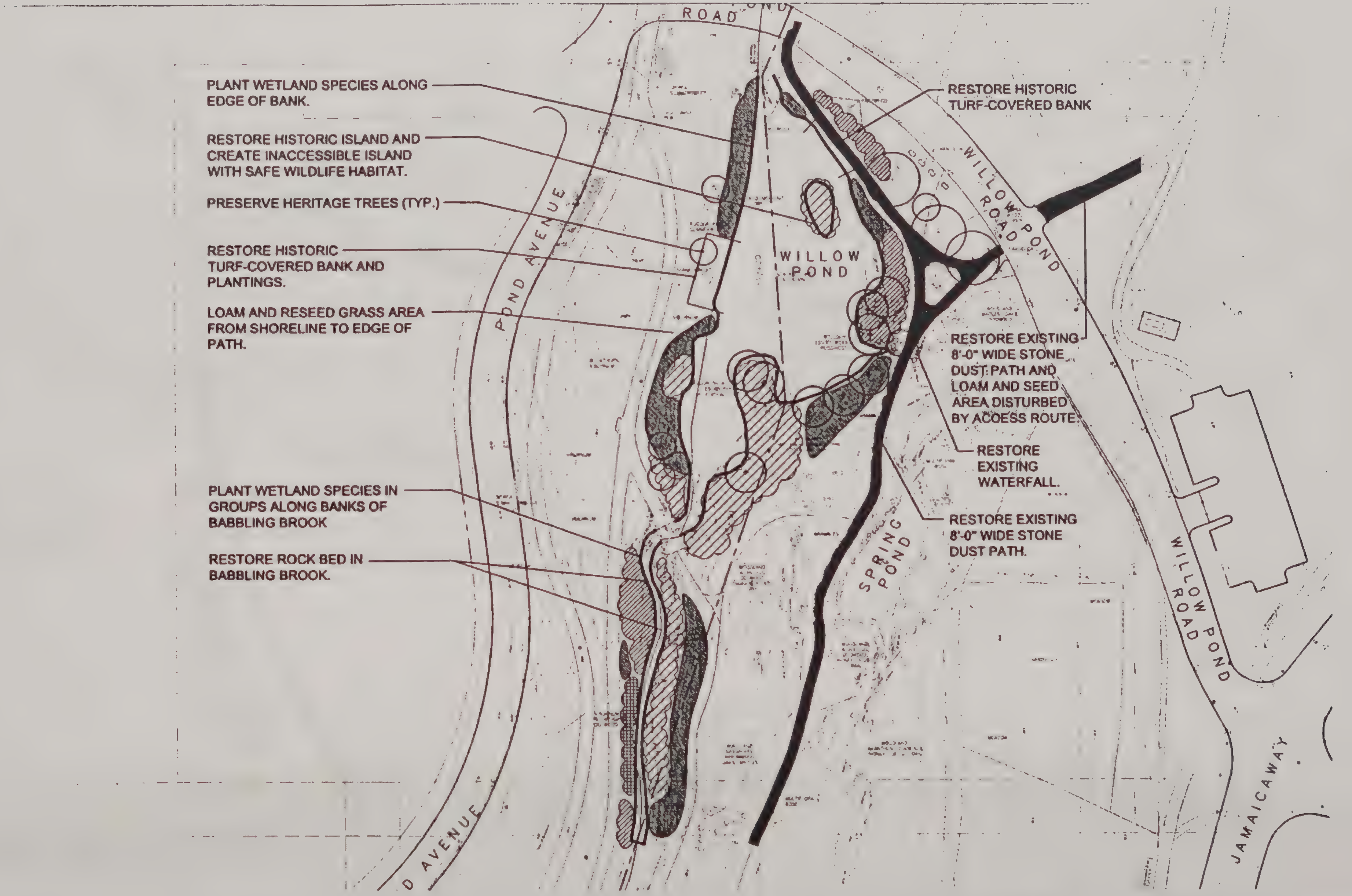
Netherlands Road

Historic Island in Leverett Pond


LOAM AND RESEED GRASS AREA FROM SHORELINE TO EDGE OF PATH.
PLANT WETLAND SPECIES ALONG EDGE OF DISTURBED BANK.
POND AVENUE
RESTORE HISTORIC TURF-COVERED BANK.
POND AVENUE
NO WETLAND PLANTING ALONG BANKE OPPOSITE ISLAND.
INACCESSIBLE ISLAND WITH SAFE WILDLIFE HABITAT.
NO WETLAND PLANTING ALONG BANK OPPOSITE ISLAND.
RESTORE HISTORIC TURF-COVERED BANK AND PLANTING.
WETLAND PLANTING ALONG BANK IN FRONT OF TURF-COVERED BANKS.
INACCESSIBLE ISLAND WITH SAFE WILDLIFE HABITAT. SELECTIVE CLEARING AND PRUNING OF EXISTING VEGETATION ON ISLAND..
RESTORE HISTORIC ISLAND AND CREATE INACCESSIBLE WILDLIFE HABITAT .
POND AVENUE
LEVERETT POND
NO WETLAND PLANTING ALONG UNDISTURBED BANK.
NO WETLAND PLANTING ALONG BANK OPPOSITE ISLAND
GROUNDCOVER PLANTING TO STABILIZE BANK.
INACCESSIBLE ISLAND WITH SAFE WILDLIFE HABITAT. SELECTIVE CLEARING AND PRUNING OF EXISTING VEGETATION ON ISLAND.
LOAM AND RESEED GRASS AREA FROM SHORELINE TO EDGE OF PATH.
WETLAND PLANTING ALONG DISTURBED BANK.
RESTORE HISTORIC TURF-COVERED BANK AND PLANTINGS.

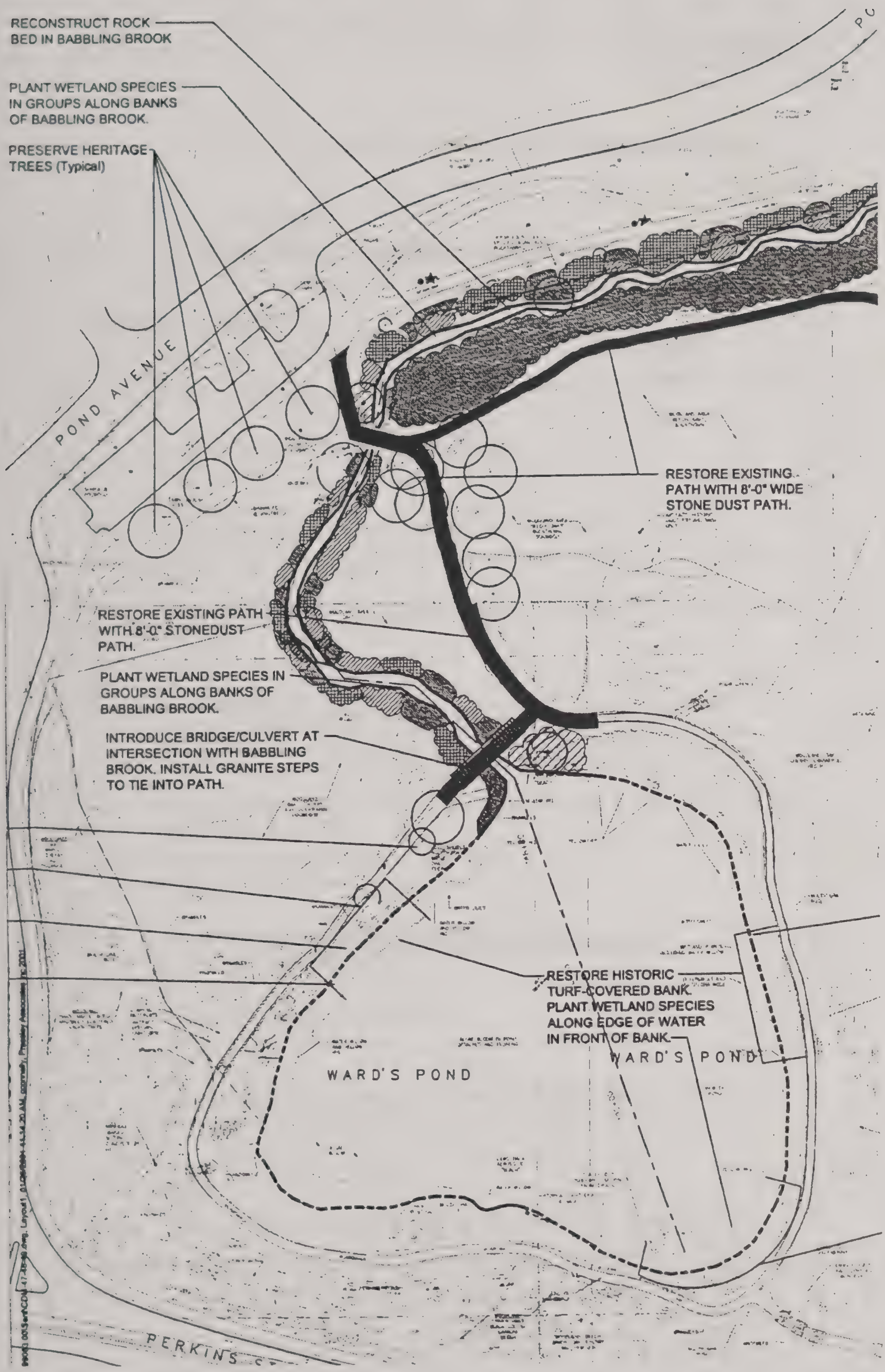

RESTORE HISTORIC TURF-COVERED BANK.
PROTECT HERITAGE TREES, TYP.
LOAM AND RESEED GRASS AREA DISTURBED BY STAGING AREA AND ACCESS STRIP
RELOCATE EXISTING BALL DIAMOND ADJACENT TO EXISTING TO ALLOW FOR STAGING AREA
SODDED INFIELD
PLANT WETLAND SPECIES ALONG EDGE OF BANK
PRESERVE HERITAGE TREES (TYP.)
RE-LOAM AND SEED AREA DISTURBED BY STAGING EQUIPMENT
LAWN (BALL FIELD)
REPLACE EXISTING 8'-0" WIDE STONEDUST PATH AND LOAM AND RESEED AREA DISTURBED BY ACCESS ROUTE
JAMAICAWAY
WAY

Daisy Field at Leverett Pond


PLANT WETLAND SPECIES ALONG EDGE OF BANK.
RESTORE HISTORIC ISLAND AND CREATE INACCESSIBLE ISLAND WITH SAFE WILDLIFE HABITAT.
PRESERVE HERITAGE TREES (TYP.)
RESTORE HISTORIC TURF-COVERED BANK AND PLANTINGS.
LOAM AND RESEED GRASS AREA FROM SHORELINE TO EDGE OF PATH.
PLANT WETLAND SPECIES IN GROUPS ALONG BANKS OF BABBLING BROOK
RESTORE ROCK BED IN BABBLING BROOK.
RESTORE HISTORIC TURF-COVERED BANK
RESTORE EXISTING 8'-0" WIDE STONE DUST PATH AND LOAM AND SEED AREA DISTURBED BY ACCESS ROUTE.
RESTORE EXISTING WATERFALL.
RESTORE EXISTING 8'-0" WIDE STONE DUST PATH.
WILLOW POND
SPRING POND
WILLOW POND ROAD
WILLOW POND ROAD
ROAD
POND AVENUE
D AVENUE
JAMAICAWAY

Willow Pond

Wards Pond


RECONSTRUCT ROCK BED IN BABBLING BROOK
PLANT WETLAND SPECIES IN GROUPS ALONG BANKS OF BABBLING BROOK.
PRESERVE HERITAGE TREES (Typical)
POND AVENUE
RESTORE EXISTING PATH WITH 8'-0" WIDE STONE DUST PATH.
RESTORE EXISTING PATH WITH 8'-0" STONEDUST PATH.
PLANT WETLAND SPECIES IN GROUPS ALONG BANKS OF BABBLING BROOK.
INTRODUCE BRIDGE/CULVERT AT INTERSECTION WITH BABBLING BROOK. INSTALL GRANITE STEPS TO TIE INTO PATH.
RESTORE HISTORIC TURF-COVERED BANK. PLANT WETLAND SPECIES ALONG EDGE OF WATER IN FRONT OF BANK.
WARD'S POND
WARD'S POND
PERKINS

Additional Cost Information

- Cost information provided to delegation
- Cost table from report
- Independent review of cost estimate

Questions and Answers

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – January 25, 2001 CAC Meeting

Northeastern University, Egan Engineering/Science Research Center
Raytheon Amphitheater — Room 240

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager

II Schedule Update and CAC Comment Process

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager

III Project Update

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

IV Presentation: Overview of the Project Elements and Construction Cost Estimate

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc

Marion Pressley, F.A.S.L.A., President
Pressley Associates, Inc.

Q&A/Discussion with CAC

V Questions and Answers (General Public) Wrap Up

Summary

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian opened the meeting and reviewed the agenda.

John Burckardt reported that three CAC members, Richard Heath, Ed Cutler and Hugh Mattison, provided comments since the November 15, 2000 meeting.

Fran Beatty responded to Mr. Heath's letter concerning the cancellation of the December 4, 2000 CAC meeting on project costs. Ms. Beatty stated that the December 4th meeting was postponed because the Parks Department and Parsons Brinckerhoff, project manager for the Parks Department, were conducting a detailed review and assessment of CDM's project cost estimate. Ms. Beatty added that the Parks Department, in coordination with the Town of Brookline and the Commonwealth, wanted to first make sure that the CDM cost estimate was thorough and accurate before it was presented to the public.

Ms. Beatty concluded that after a detailed review of the CDM cost estimate, the Parks Department, Town of Brookline and the Commonwealth agree that the cost estimate prepared by CDM is thorough and accurate.

Project Funding Strategy

Ms. Beatty provided a summary of the funding strategy that is being implemented in cooperation with the Congressional delegation, Commonwealth, City of Boston and Town of Brookline. Ms. Beatty emphasized that all parties are looking for larger sources of funding. The U.S. Army Corps of Engineers (USACOE) is the most likely source of federal funds and the Congressional delegation has been working closely with the New England District of the Army Corps.

Ms. Beatty added that the search for the necessary funding has brought all interested and applicable parties to the negotiating table and there is consensus on the project elements as they have been presented to the CAC and will be further described in the Draft Environmental Impact Report.

Ms. Beatty briefly described the process that the USACOE is engaged in and the Decision Document that they will produce that will help more clearly define the magnitude and scope of federal involvement in the project.

U.S. Army Corps of Engineers (USACOE) Project Involvement

Ms. Beatty then introduced Richard Heidebrecht, Project Director, from the New England District of the USACOE. Mr. Heidebrecht then summarized the work that the USACOE is currently doing related to the Muddy River project.

Mr. Heidebrecht stated that the USACOE has meet with CDM to determine what information gathered by CDM the Corps could use in completing the Decision Document can use. Mr. Heidebrecht emphasized that the Corps can only get involved in a project for flood control or ecosystem restoration.

Q&A/Discussion with CAC

A CAC member noted that the Corps of Engineers has a clear and somewhat narrow mandate yet the Muddy River project has many other, broader project elements. Will there be a collaborative funding effort that involves other federal or state agencies as well?

Fran Beatty responded stating that all parties are coordinating their efforts and are committed to obtaining all available financial assistance. Ms. Beatty emphasized that determining the extent of the Corps involvement in the project is the first step. If a funding gap exists beyond what the Corps is able to do, then funding from alternative sources will be sought.

Mr. Heidebrecht added that the Corps cannot participate in elements of the project associated with recreation or local drainage infrastructure.

Is the Corps of Engineers subject to the historic regulations?

Mr. Heidebrecht responded that the Corps is subject to all applicable federal and state regulations such as the federal Section 106 regulations regarding historic preservation. Mr. Heidebrecht added that some of the restoration limits that have been defined for the Muddy River project are likely beyond the limits in which the Corps can participate.

To what degree does percentage of involvement define the Corps's level of involvement in the project?

Mr. Heidebrecht stated that normally the Corps manages the entire project. He said the Corps' level of involvement and role on the Muddy River project has not been determined, and it will not be determined until the Decision Document is completed. Mr. Heidebrecht added the cost sharing is 65% federal and 35% non-federal. However, internally within the New England District, Heidebrecht said that if the Corps participates and manages the project, they may use 100% of federal funds to complete the design.

Mr. Heidebrecht said the budget for the Decision Document is $500,000.

Will the Decision Document impact the Charlesgate phase of the project?

Mr. Heidebrecht stated he does not know what the impact of the Decision Document will be on the Charlesgate phase of the project. He said the Corps will discuss this with the City and CDM. Mr. Heidebrecht said that while it may be advantageous for the City and Town of Brookline to move ahead with the Charlesgate piece, it is critical that the Charlesgate work not be considered a separate project from the Muddy River Restoration Project. If the Charlesgate work is considered a separate project and those improvements are considered to be "existing conditions" then there is less justification for the Muddy River improvements upstream. However, as long as Charlesgate remains a part of the total project, this will not be an issue.

II Schedule Update and CAC Comment Process

This agenda item was addressed at the end of the meeting after comments and questions from the general public. (see below)

III Project Update

Bruce Conklin stated during the last month CDM was working on developing the detailed cost estimate and drafting the draft environmental impact report (DEIR). Mr. Conklin added that the review draft of the DEIR is under review with the client group (City of Boston, Town of Brookline and applicable state agencies). Mr. Conklin stated that once comments are received and incorporated, the CAC will get a revised draft of the DEIR for their review and comment.

How long will the CAC have to review and comment on the DEIR?

Ms. Beatty stated that the CAC will be given as much time as it needs or wants to review and comment on the DEIR.

IV Presentation: Overview of the Project Elements and Construction Cost Estimate

A copy of the presentation made by the CDM consultant team is included as Attachment 2.

Mr. Conklin began by stating that the presentation is an overview of the detailed project cost estimate that has been developed for the DEIR. Mr. Conklin added that the cost estimate developed is credible, has undergone detailed review and scrutiny, and is an accurate estimate of the project costs. Mr. Conklin also distributed three items to the CAC:

- the detailed cost summary that was presented to the Massachusetts Congressional delegation,
- the Parsons Brinckerhoff review of the cost estimate, and
- Table 5-2 which is the detailed cost breakdown.

Mr. Conklin acknowledged that some of the project elements may go beyond what the Corps can participate in under its mandates (unless otherwise directed by Congress). However, as a whole, the project elements satisfy several of the project objectives and they are all inter-related. Mr. Conklin added that the project includes elements not estimated in the ENF and is therefore more expensive.

Mr. Conklin then went through each element of the project, broken down by river reach, and explained the costs.

Charlesgate

Mr. Conklin said the costs for Charlesgate are straightforward because the scope of work simple and includes: dredge the channel and remove obstructions; dispose sediments and restore disturbed areas.

Mr. Conklin explained that escalation has been built into the estimate representing inflation. The design development and contingency is estimated at 35% and a major portion of the costs for the Charlesgate segment of the project.

Why combine Design Development and Contingency?

Mr. Conklin clarified the meaning of Design Development. He said that Design Development is not the cost of design, it is the cost of constructing improvements that have not been designed. Since the project is at the 25% design stage, Mr. Conklin said part of the construction cost estimate has to include the construction costs of things that have not yet been designed.

Mr. Conklin emphasized that cost estimates for Design Development are not design costs but are construction costs.

What is the rate or percentage used for escalation?

Mr. Conklin said 2.5% per year is used for escalation.

Marion Pressley explained that the Charlesgate segment of the project involves replacement in kind within the disturbed areas. Disturbed areas will be restored with loam and seed and plantings. The planting pattern will have a layered effect and the palette will be the same throughout the project.

Back Bay Fens

Mr. Conklin explained that improvements that would be implemented in the Back Bay Fens. He said that sediment removal and disposal is a large part of the total cost of improvements in this area. The sediment in the Back Bay Fens is the most contaminated of all the sediment in the river. Mr. Conklin stated that the total costs for the Back Bay Fens is approximately $47 million and approximately $20 million is for disposal of sediment.

In the Back Bay Fens, $9 million is estimated for design development and contingencies and $4 million is estimated for escalation.

How accurate or firm is the sediment cost estimate?

Mr. Conklin stated that the sediment cost includes an assumption that the *Phragmites* are also contaminated and will have to be treated appropriately. Mr. Conklin added that CDM is working with DEP on this issue to determine if the *Phragmites* can be handled separately from the sediments in order to reduce disposal costs.

Why is there so much lead in the sediment samples taken from the Back Bay?

Mr. Conklin said the presence of lead is not unusual since it was once a component of gasoline and used in fertilizers which may have been used in the Victory Gardens.

Did CDM consider various technologies to treat the lead in order to reduce the sediment treatment and disposal costs?

Mr. Conklin said the cost estimate includes the use of various lead binding technologies to reduce the cost of treatment and disposal of sediment. Mr. Conklin added that approximately 55% of all material to be removed from the river during the project will come from the Back Bay Fens.

Marion Pressley then presented an example of the landscape treatment for the Duck House area to illustrate the landscaping plan for the Back Bay Fens. Ms. Pressley reviewed the combination or palette of plantings and provided an example of a wetlands shelf. Ms. Pressley added that all heritage trees would be preserved. Heritage trees are those trees that are 32" or larger in diameter. Ms. Pressley said that the other types of plantings will include intermediate trees and different types of shrubs to reflect the Olmsted design.

Ms. Pressley emphasized that landscape treatment is taking place only in areas that are disturbed due to construction of the flood control and water quality improvements.

In the Charlesgate area there are some pine trees in very poor condition, will these be removed?

Ms. Pressley stated that only trees that are within the disturbed areas, or are in very poor condition, would be removed. An assessment of all trees has been conducted and they have been categorized by their condition. Ms. Pressley did not have specific information with her to state which pine trees in the Charlesgate area would be removed.

In the Charlesgate area, has consideration been given to getting rid of the benches, particularly since they can attract undesirable activity to take place there?

Ms. Pressley said there is time during the final design phase of the project to address this issue.

In the Fens Bridge area, the westerly side of the bridge of not affected but the area to the north will be disturbed. Will there be an awkward asymmetrical planting as a result of not doing planting treatment on both sides of the bridge?

Ms. Pressley explained that the areas not disturbed are not part of the project. She added that there are regulatory issues associated with implementing planting plans in the areas that will not be disturbed as a result of the improvements made in the river.

Did CDM look at on-site treatment of the dredged material as a way to reduce the treatment and disposal cost of the material?

Mr. Conklin stated that CDM did examine the feasibility of on-site treatment of the dredged material. He added that a treatment plant would need to be constructed on site and the impacts of on-site treatment would be significant. In the construction bidding process, Mr. Conklin stated that an alternative for on-site treatment approach will be considered although he does not think that this approach would yield any cost savings.

Can we save money on the project if less sediment is dredged from the river and more resources are put into the BMPs?

Mr. Conklin stated that CDM has not performed this analysis. Mr. Conklin said that by dredging less, all of the *Phragmites* would not be removed and this could create a big maintenance issue and significantly reduce the life cycle benefit of the dredging that would be completed.

What is a bio-retention area?

Mr. Conklin explained that a bio-retention area is essentially a swale that filters runoff before it enters the river. The swale will be able to capture some of the metals and sediments present in overland runoff before the runoff enters the river. Mr. Conklin added that a bio-retention area is an example of a best management practice (BMP). Mr. Conklin added that most people will not even notice the bio-retention areas that are installed.

Do the plantings, disposal of sediments and Phragmites *meet the USACOE criteria as a participatory cost?*

Mr. Conklin stated that removal and disposal of sediments and *Phragmites* for flood control is an eligible item under the Corps' criteria.

Mr. Heidebrecht added that removing toxic material to improve aquatic habitat is within the Corp's mandate for environmental projects, but that upland removal of *Phragmites* is not.

Have plans been developed for rodent and geese control?

Mr. Conklin stated that the rodent control plan is contained in the draft Environmental Impact Report (DEIR). The geese will voluntarily move on their own during the construction according to Mr. Conklin. Additionally, through the use of vegetation, areas where geese can access the river will be limited after construction.

Are the high lead concentrations in the Back Bay Fens sediments due to the fill that the Victory Gardens are built upon?

Mr. Conklin stated that lead may not be contained in the original fill but it may be in the fines at the top of the sediment layers and potentially introduced to the river through surface water runoff.

Fens Bridge

Mr. Conklin explained that the improvements at the Fens Bridge represent a small part of the work in the Back Bay Fens. The total cost of the Fens Bridge improvements is approximately $500,000. Ms. Pressley reviewed the planting plan for the area upstream of the Fens Bridge.

Downstream of Brookline Avenue

Mr. Conklin summarized the scope of work in this segment of the river while Ms. Pressley reviewed the planting plan.

What are the cost implications if modifications to the "jug handle" or the other adjacent roadways are made?

Mr. Conklin stated if the jug handle was eliminated, CDM would recommend expanding the area of the river to be daylighted in this segment. The additional area to be daylighted would increase the cost of the project. However, there is also a saving in the length of the Brookline Avenue culvert. (These cost savings may offset some of the cost of additional excavation for daylighting.) Mr. Conklin added that there may be an opportunity to share or pass on the costs of this recommended alternative to the transportation project when and if that project is built. Mr. Conklin added that Fran Beatty is coordinating this effort presently with the Boston Transportation Department.

Why do the plans show a large paved area at the headwall of the culverts at the old Sears building?

Mr. Conklin said the purpose of the paved area is to allow for vehicular access to the culvert inlet grates in order to clean them and perform routine maintenance. Presently, the Boston Water and Sewer Commission has been cleaning the existing grates to optimize the drainage capacity of the structure.

Why is CDM recommending screened gravel for the river bottom in the daylighted areas?

Mr. Conklin said screened gravel is recommended for erosion protection. He added that the natural material, at the design slopes needed, is not resistant to erosion.

Ms. Pressley added that Olmsted used riprap as well for erosion control on the banks of the river in many sections.

Does the historic island interfere with river flow?

Mr. Conklin responded yes but there is no measurable effect when modeled.

Riverway

Mr. Conklin summarized the scope of work that will be performed in the Riverway. He added that dredging is not absolutely needed for flood control. There will be some channel modification of the Riverway to restore the historic shoreline and original capacity of the Riverway by the removal of *Phragmites*.

Ms. Pressley said the landscaping plan is consistent with the plant massings Olmsted used in the Riverway.

Leverett Pond

Mr. Conklin reviewed the specific improvement measures that will be implemented at Leverett Pond. Ms. Pressley added that the landscaping plan will follow the Olmsted plans for Leverett Pond and the landscaping treatment will be limited to the areas that are disturbed as a result of the work done in the pond.

Willow Pond

Mr. Conklin stated that dredging in Willow Pond is for water quality improvement and not flood control. CDM is also evaluating the use of particle separators and over-dredging because the sediment accumulation rate in the pond is high.

Spring Pond

Mr. Conklin explained that the critical issue with Spring Pond is mitigating the impact of the proposed improvements at Willow Pond on the stickleback, the endangered species whose habitat includes Spring Pond. Carl Noyes added that the project team has been meeting with the regulators to develop a reasonable protection plan for the species.

Ward Pond

Mr. Conklin summarized the improvements that will be constructed at Ward Pond. Mr. Conklin added that lead was found in the sediment in high concentration in one small area of the pond.

Has there been significant erosion at the pathway?

Ms. Pressley said a path will be installed to minimize erosion from people walking along the banks.

Is the hill adjacent to the pond a source of erosion? If so, the project team should look at BMP measures to minimize erosion.

Mr. Conklin stated that the structural BMPs will be implemented as part of the project.

Cost Difference Between ENF and Recommended Project

Mr. Conklin distributed the detailed cost estimate developed by CDM and the report prepared by Parsons Brinckerhoff that included a review of CDM's cost estimate.

Mr. Conklin summarized the cost differences between the ENF and the recommended project for the various project elements including: *Phragmites*, BMPs, mitigation measures, sediment removal and disposal, and project escalation.

Q&A/Discussion with CAC

A CAC member expressed concern that the project will result in a narrow strip of landscape treatment and restoration along the riverbanks but no improvements implemented upland.

Mr. Conklin responded that the landscape treatment is limited to areas disturbed as a result of the improvements made in the river and along the bank edges.

Ms. Pressley explained that the DEM is developing a landscape treatment plan for the upland areas that would be implemented over time.

Will the DEM solicit input and review of its project from the CAC?

Ms. Beatty responded that MEPA will be consulted. Ms. Beatty added that she anticipates the CAC will move into other areas of the Emerald Necklace once the Phase I project moves into the construction phase.

Several CAC members commented that they would like to have time to review the supporting documentation on the project cost estimate and to meet with the project team who could respond to questions and concerns of the CAC.

V Questions and Answers (General Public) Wrap Up

There were no additional questions or comments provided.

Meeting Schedule

The CAC scheduled its next meeting for February 26, 2001 at 6:00 PM. The purpose of the meeting is to provide the CAC with an opportunity to ask questions and provide input on the detailed project cost estimate. The location of the meeting will be determined. The CAC also scheduled a meeting to be held on March 14, 2001 at 6:00 PM at which time the CAC will begin planning the process it will use to review the DEIR and develop its comments.

Ms. Beatty explained that the Draft Environmental Impact Report (DEIR) will be distributed to the CAC in April. Ms. Beatty added that the CAC can have as much time as they desire to review and provide input on the document.

Ms. Beatty suggested that the March CAC meeting focus on the CAC's review schedule of the DEIR. Ms. Beatty suggested that the CAC consider an extended review period.

Enclosures:
Attachment 1 – Sign-In Sheet (4 pages)
Attachment 2 – CDM Consultant Team Presentation titled "Overview of Project Elements and Construction Cost Estimate" by Camp Dresser and McKee Inc. (23 pages)
Attachment 3 – "Project Cost Estimate – Overview" by Camp Dresser & McKee Inc. (8 pages)
Attachment 4 – "Muddy River Restoration Project, Construction Cost Estimated Based on Conceptual Design" by Camp Dresser and McKee, Inc. (3 pages)
Attachment 5 – Memorandum dated December 22, 2000 regarding "Muddy River Restoration Project, Review of CDM Cost Estimate" by Parsons Brinckerhoff (24 pages)

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

January 25, 2001

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	Ed Cutler
Margaret	Dyson	Historic Massachusetts	Margaret Dyson
Frances Allou	Gershwin	Mahoney, Hawkes ~~& Goldings~~	Frances Allou Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Emerald Necklace Citizens Advisory Committee

Meeting

January 25, 2001

Sign-In Sh

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	Levee
John A.	Martin	Emerald Necklace Conservancy	JAM - part time (QFS)
Hugh	Mattison	Friends of Leverett Pond	
Lauren	Meier		Lauren M
Paul	Mentag	Fenway Alliance	Paul Mentag
Mary Crain	Penniman	Charles River Watershed Association	MCPenniman
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	Sabal
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

January 25, 2001

\\parksmain\bospark\Muddy\CAC Meetings\CAC-14 Jan 25 2001\[CAC Sign-in Jan_25_2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
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Richard Thibedeau	MA DEM	617 626-1396	R.Thibedeau@state.ma.us
Richard Heidebrecht	USACE	978-318-8513	Richard.w.Heidebrecht@usace.army.mil
Jan Henderson	MABLO	632-2762	
Gina Crandell	Harvard	731-0503	crandell@gsd.harvard.edu
Marian			
Arlene Mattison	F of L.P.	232-6083	
Betsy Shure Gross	EOEA	262-1117	
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Claire Flury	M. Garden Soc.	266-1169 9'5 Park DR	Boston Ma 02215
Anne Covert		738-0107 14 Monmouth Ct	Brookline 02446
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David Noonan	CDM	617-452-6275	NoonanDC@cdm.com

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

January 25, 2001

\\parksmail\bospark\Muddy\CAC Meetings\CAC-14 Jan 25 2001\[CAC Sign-in Jan_25_2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Fran Beatty	Boston Parks	6354505	beatty@ci.bost ma
Gary Hilderbrand	Reed Hilderbrand	617 3540554	gary@reedhildenb .c
Marion Pressley	Pressley Assoc.		
Bruce Conklin	CDM		
Paul Demit	CDM		
Sam Overton Russell	MDC		
Susan Jeghelian	MODR		

ATTACHMENT 3

DRAFT DOCUMENT FOR DISCUSSION PURPOSES ONLY

EMERALD NECKLACE
ENVIRONMENTAL IMPROVEMENTS MASTER PLAN
AND
PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT AND HISTORIC PRESERVATION

DRAFT ENVIRONMENTAL IMPACT REPORT

Project Cost Estimate – Overview

January 9, 2001

Prepared by:
Camp Dresser & McKee Inc.

Prepared for:
City of Boston
Town of Brookline

The Project Objectives

The Phase 1 – Emerald Necklace/Muddy River Restoration Project is a complex and unique undertaking, which has brought together a broad coalition of public sector elected and appointed officials, business representatives, medical, educational and art institutions, residential neighbors and non-profit organizations. The project initiates the restoration of an internationally renowned historic landscape listed on the National Register of Historic Places and locally landmarked. In focusing on the ecological restoration of an urban river and park system, it will:

-Improve flood control by increasing the hydraulic capacity of the Muddy River;

-Improve water quality of the Necklace's waterways;

-Enhance aquatic/riparian habitat;

-Restore the landscape and historic resources; and

-Protect the public's investment by implementing "Best Management Practices" that will ensure longer-term protections as a result of the project work.

The Project's Progression

Over the course of the past 11 months, the communities of Boston and Brookline have worked with the Commonwealth of Massachusetts and numerous agencies, civic groups and consultants to lay the ground work for a Draft Environmental Impact Report (DEIR). These groups have included: the Massachusetts Congressional delegation, the US Army Corps of Engineers, the Federal Emergency Management Agency, the Massachusetts Emergency Management Agency, the Boston Water & Sewer Commission, The Emerald Necklace Conservancy, and consultants Camp Dresser and McKee Inc. (CDM) and Parsons Brinckerhoff. In addition, a Citizens Advisory Committee (CAC) has met 14 times since September 1999 and there have been two public information meeting as part of this process to ensure a fully scoped and informed process and project. The beginning of this process started with the development and submission to Massachusetts of the 1999 Environmental Notification Form (ENF), which incorporated the results of numerous studies dating back to 1996 and earlier. In response to the ENF, the Secretary of the Massachusetts Executive Office of Environmental Affairs issued on April 29, 1999 two Certificates: one for the requirements and scope for an EIR, and another establishing a Special Review Procedure. Since February 2000, CDM and their subconsultants have collected significantly detailed scientific data, extensive surveys, comprehensive historic documentation, and up-to-date hydrologic modeling data. This comprehensive additional information has offered better delineation of the engineering and restoration requirements for the project. The consultants have spent over 30,000 hours collecting this information. Also, enormous staff support has been provided by agencies within Boston, Brookline, and the Commonwealth, not to mention the significant contributions of time and expertise provided by volunteers, including but not limited to those serving on the Citizen's Advisory Committee. In addition, the U.S. Army Corps of Engineers and the USGS have collected new information that has been incorporated into the Draft EIR.

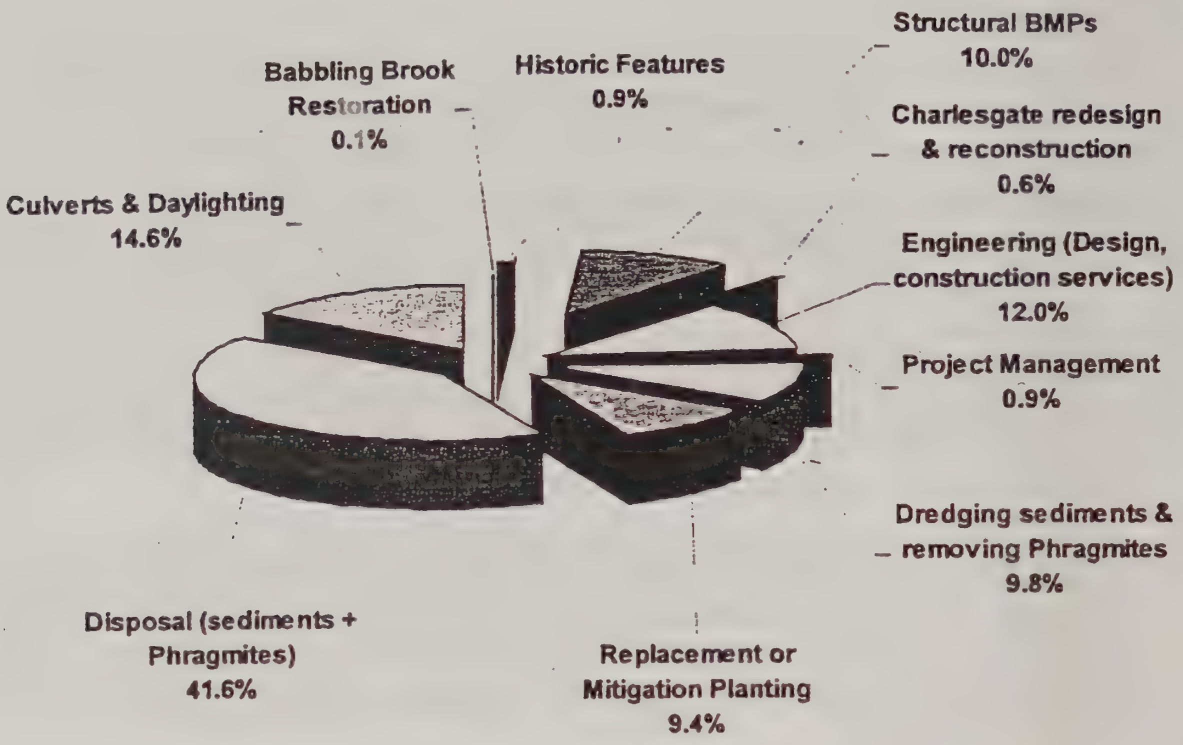
The result of this massive data collection effort has been to make the Draft EIR cost estimate more thorough, comprehensive, and accurate than any prior estimate. Significant differences in the approaches have uncovered new site conditions originally not understood. Some highlights include:

-Ten times more sediment data in the EIR (150 samples in addition to the original 15 samples). We now know that there is significantly more contaminated sediments that will need disposal. Overall, over 50% of the project costs lie in the dredging and disposal of sediment and invasive species (namely *Phragmites*). About 12% of that amount is solely sediment disposal.

-The detailed surveys, field investigations, and wetlands delineations revealed the rapid *Phragmites* expansion. Since the ENF was issued, the overall volume of this invasive species has grown. More importantly, engineering investigations show the *Phragmites* must be removed in two steps (one for the reeds, one for the root mass), instead of the single step originally assumed.

-Analyses show that water quality in the Muddy River is improving, and annual sediment loadings have been cut in half over the last ten years. Present estimates show that under present rates, re-sedimentation may occur in 50 years. By investing an additional $11 million in future improvements in the form of structural best management practices, the rate of re-sedimentation can be extended to over 70 years—just about a life time.

Subsequent pages describe the differences in costs between the ENF and the Draft EIR. The differences cover the full spectrum of project activities and objectives, including provisions for inflation, mitigation planting for areas that are disturbed, providing infrastructure to protect the public's investment, handling the enormous volumes of hazardous materials, restoring historic features, and addressing unforeseen problems once groundbreaking gets under way.



Summary of Project Costs[1]

Dredging sediments & removing *Phragmites*	8,980,000
Replacement or Mitigation Planting	8,640,000
Disposal (sediments + *Phragmites*)	38,133,000
Culverts & Daylighting	13,412,000
Babbling Brook Restoration	120,000
Historic Features	793,000
Structural BMPs	9,155,000
Charlesgate redesign & reconstruction	525,000
Engineering (Design, construction services)	11,000,000
Project Management	845,000
Total	**91,603,000**

Note:

[1] Cost items include inflation to mid-point of construction plus the Design Development/ Contingency factor. See notes on page 7.

DISCUSSION OF COST BREAKDOWN

1. **Structural BMPs** ($11,087,000 differential, includes engineering costs)
No significant structural BMPs were included in the ENF.

Cost Effectiveness.
The cost effectiveness of structural BMPs is that they help preserve the constructed project by continuing to improve sediment removal efficiencies in future years. The implementation of BMPs is a project objective and their importance is reinforced the Secretary's Certificate, which expressly requires structural BMPs and demonstration projects be included in the DEIR. The extent, nature, and type of structural BMPs has not been finalized. The cost estimate is based on known problem areas, BMPs consistent with a park setting, and an evolutionary approach that phases in BMPs as the engineering evaluations are completed and likely effectiveness is assessed.

2. ***Phragmites***—($9,172,000 differential)
First, there is a greater volume of *Phragmites* to be removed than estimated in the ENF. We conducted a detailed wetlands delineation with explicit survey points that determined the phragmites volume with greater accuracy. In addition, the *Phragmites* themselves have grown and invaded more area. Second, the cost of removal, disposal and refilling was not addressed separately in the ENF. Based on detailed engineering evaluations, *Phragmites* will have to be removed in two stages, one for the reeds, another for the root mass, thereby increasing costs. The ENF assumed the *Phragmites* could be removed in one step.

Cost Effectiveness.
Our estimates contain all costs associated with removing, disposing and refilling all past and newly grown areas of *Phragmites*. We intend to use excavator or cutter heads to remove the *Phragmites*.

3. **Replacement or Mitigation Planting**—($4,679,000 differential)
The ENF assumed disturbed areas would be merely re-seeded as lawn and emergent plant material, and no historic landscaping would take place. Through the CAC process and meetings with regulators, it has become apparent that meeting the project objectives of historic preservation and habitat enhancement in the context of current regulations requires a more intense planting effort. Therefore, the DEIR contains provisions to replace disturbed areas with historic landscaping and wetlands species consistent with the Emerald Necklace Master Plan.

Cost Effectiveness.
The planting plans are consistent with Olmsted's to the point practical. However, to minimize costs, the DEIR includes wider spacing between plants and use of less expensive indigenous plants and shrubs that provide the same visual effect but at lower cost.

4. **Remaining Project Elements (Dredging, Culverts & Daylighting)**—($4,818,000 differential)

The estimated cost difference of the remaining project elements (such as dredging and flood control infrastructure such as the daylighting at Sears Parking Lot) including engineering are lumped together in this category.

Cost Effectiveness.
CDM reviewed alternative approaches for dredging and multiple designs for improving flood carrying capacity. The approach and designs included in the DEIR are the least expensive alternatives that meet the project's objectives. Note that some reductions in total project cost might accrue via value engineering. CDM's experience suggests that any savings will be less than 10%.

5. **Disposal Costs**

Disposal costs include the removal of hazardous and non-hazardous sediments.

Hazardous Sediments—($3,149,000 differential)
The ENF sediment estimates were based on up to 15 samples collected along the entire length of the river. The DEIR estimates has the advantage of the data collected from 150 samples collected along the river (i.e., ten times more contaminant information). As a result, we estimate that there is significantly more hazardous sediment (6,700 cubic yards versus 25,870 cubic yards).

Cost Effectiveness.
Although the volume of contaminated sediment went up, we have actually worked to keep the disposal costs down based on our experience in stabilizing lead wastes on large-scale projects. The DEIR unit cost is $187.50/cubic yard compared to $254.00/cubic yard included in the ENF.

Non-Hazardous Sediments—($2,514,000 differential)
Although the quantities of non-hazardous sediment is slightly lower than those estimated in the ENF, the unit disposal costs are significantly higher ($79.87/cubic yard in the ENF versus $137.50/cubic yard). The ENF unit cost is much lower than today's market conditions—perhaps the unit cost reflected only the tipping fee and excluded the cost of transport.

Cost Effectiveness.
CDM's unit costs are based on hard bid data obtained on the Central Artery Project. Our unit cost reflects a rate recently negotiated by contractors at landfills for similar sediment volumes with similar physical characteristics.

6. **Historic Features**-- ($287,000 differential)
The repair of the Fens Bridge and historic islands is an additional item in the DEIR that was not considered or included in the ENF and also goes toward meeting the historic preservation objective of the Secretary's Certificate.

Cost Effectiveness.
The cost estimate reflects the most up to date prices for work of this type.

Notes Regarding Design Development, Contingencies and Inflation Factors
Cost items include inflation to mid-point of construction plus the Design Development/ Contingency factor.

Inflation Allowance—($5,099,000 differential)
The calculated cost of inflation from the DEIR stage to the estimated mid-point of construction has been added to the construction cost at a rate of 2.5% per year. The ENF included no inflation cost. Inflation is schedule-dependent, so as the project gets delayed, construction costs will continue to rise.

Cost Effectiveness.
The rate we used is based on present construction industry rates for time and materials, and was validated by Parson's independent review.

Design Development and Contingencies—($7,477,000 differential)
Relying on 50 years of experience on complex projects of similar size, CDM recommends an allowance of this proportion (approximately 19% to 22% of project cost depending on river segment), especially since we are only at the conceptual design stage (i.e., only about 20% of the project has been designed).

Cost Effectiveness.
The overall percentage falls on the low range of values typically used for projects of this magnitude. Examples of unforeseen problems that could be encountered:
-Changed underground conditions, such as undisclosed utilities in the project path, or soil and rock conditions that are different between boring locations;
-Weather or storm delays that extend project schedules and present flood flow handling problems;

-Quantity estimate changes, wherein actual quantities of some contract items vary from the engineer's estimate;

-Changes in scope, such as having to replace a catch basin that was originally thought to be structurally sound but wasn't;

-Changes in groundwater levels, requiring greater dewatering and impeding project progress;

-Changes in the construction "environment," whereby local citizens take issue and complain about the contractor's operations, necessitating changes in operations, conditions or operating hours. (An extreme example of this is the barging of people and materials to the Deer Island Treatment Facility at considerable extra expense to address Winthrop's residents' concerns about local traffic.)

Attachment 4

MUDDY RIVER RESTORATION PROJECT
CONSTRUCTION COST ESTIMATE BASED ON CONCEPTUAL DESIGN
(Costs Rounded to Nearest $1,000)

	DEIR Estimate	
	Quantity (cy)	Cost
Charlesgate		
Dredging	4,000	$238,000
Replacement or mitigation planting*		$656,000
Disposal - Non RCRA	4,000	$550,000
Subtotal construction estimate		$1,444,000
Design Development / contingencies		$423,000
Subtotal		$1,868,000
Escalation 2.5%		$47,000
Total Charlesgate		$1,915,000
Back Bay Fens		
Dredging / grading / phragmites removal	103,435	$3,470,000
Replacement or mitigation planting		$2,162,000
Disposal sediments / phragmites -Non RCRA	59,623	$8,151,000
Disposal sediments / phragmites - RCRA	43,812	$10,896,000
Fens Bridge		$514,000
Daylight Upper Fens Pond to Back Bay		$1,014,000
Brookline Avenue Culvert / gatehouse		$3,961,000
Daylight Sears Parking lot		$1,672,000
Riverway Culvert		$2,535,000
Subtotal construction estimate		$34,375,000
Design Development / contingencies		$9,174,000
Subtotal		$43,549,000
Escalation 8%		$3,484,000
Total Back Bay Fens		$47,033,000
Riverway		
Dredging / grading / phragmites removal	28,477	$945,000
Replacement or mitigation planting		$1,762,000
Disposal sediments / phragmites -Non RCRA	28,477	$3,903,000
Historic islands		$30,000
Subtotal construction estimate		$6,639,000

MUDDY RIVER RESTORATION PROJECT
CONSTRUCTION COST ESTIMATE BASED ON CONCEPTUAL DESIGN
(Costs Rounded to Nearest $1,000)

		DEIR Estimate
Design Development / contingencies		$1,738,000
Subtotal		$8,378,000
Escalation 8%		$670,000
Total Riverway		$9,048,000
Leverett Pond		
Dredging	21,788	$764,000
Replacement or mitigation planting		$775,000
Disposal sediments -Non RCRA	21,788	$2,996,000
Subtotal construction estimate		$4,535,000
Design Development / contingencies		$1,138,000
Subtotal		$5,672,000
Escalation 8%		$454,000
Total Leverett Pond		$6,126,000
Willow Pond		
Dredging / grading	5,054	$177,000
Replacement or mitigation planting		$523,000
Disposal sediments -Non RCRA	5,054	$695,000
Babbling Brook		$120,000
Subtotal construction estimate		$1,515,000
Design Development / contingencies		$426,000
Subtotal		$1,942,000
Escalation 8%		$155,000
Total Willow Pond		$2,097,000
Ward's Pond		
Dredging / grading	15,565	$546,000
Replacement or mitigation planting		$160,000
Disposal sediments -Non RCRA	14,008	$1,926,000
Disposal sediments -RCRA	1,557	$292,000
Subtotal construction estimate		$2,924,000
General conditions		
Design Development / contingencies		$691,000
Subtotal		$2,909,000

MUDDY RIVER RESTORATION PROJECT
CONSTRUCTION COST ESTIMATE BASED ON CONCEPTUAL DESIGN
(Costs Rounded to Nearest $1,000)

		DEIR Estimate
Escalation 8%		$246,000
Total Ward's Pond		$3,155,000
Engineering cost		$8,900,000
Grand Total with out structural BMPs		$78,274,000
Structural BMPs		
Sediment Weirs at Tannery and Village Brooks		
Sediment Basins Dredging	21,147	$741,000
Sediment Basins Disposal -Non RCRA	17,717	$2,436,000
Sediment Basins Disposal - RCRA	3,430	$643,000
Structural BMPs based on results of initial BMP implementation		$1,947,000
Correct MDC curb /catch basins		$367,000
Wetland swale at Victory Gardens		$70,000
Three particle separators		$559,000
Particle separator at Chestnut St.		$200,000
Design Development / contingencies		$1,975,000
Escalation 8%		$217,000
Engineering cost		$2,100,000
Total Structural BMPs		$11,255,000
Project Total with BMPs		$89,529,000
Charlesgate Surface Redesign and Reconstruction**		$525,000
Project Total with BMPs and Charlesgate Reconstruction		$90,054,000

* In disturbed areas including staging areas

** Estimated cost to complete redesign and reconstruction of Charlesgate landscape in addition to the cost carried under the Charlesgate Area above

MEMORANDUM

DATE: December 22, 2000

TO: Distribution

FROM: John Burckardt

RE: Muddy River Restoration Project
Review of CDM Cost Estimate

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Attachment: Summary of CDM's Cost Estimate

Executive Summary

As requested by the Boston Parks & Recreation Department and Town of Brookline, co-proponents of the Muddy River Restoration Project, Parsons Brinckerhoff (PB) reviewed the construction cost estimate prepared by Camp Dresser & McKee Inc. (CDM), dated November 2000. The purpose of the review was to evaluate the appropriateness of CDM's approach and methodology used in developing the quantity takeoffs and cost estimates. PB also reviewed the basis of the actual unit prices as well as costing factors such as the inflation factor and contingencies. At this point in time, PB was not asked to perform a value engineering analysis or to critique elements of the "recommended project."

The CDM estimate is based on the "recommended project" as presented in the Citizens Advisory Committee (CAC) meetings of October 23 and 30, 2000 and the Public Information Meeting of November 8, 2000.

PB's review was performed by various senior staff familiar with heavy construction in the Boston area, handling of contaminated materials, and dredging.

Review of CDM's Cost Estimate:
The findings are as follows:

- *Approach and Methodology:* The overall approach and methodology are based on standard construction cost estimating practices.
- *Estimating Factors:*
  - *Contingencies and Inflation Factors:* The factors used for contingencies and inflation are acceptable for this stage of the design. (Contingencies/design development = 35%; inflation = 2.5% per year and 8% for 3 years[1] If the proponents anticipate a rise in inflation, the inflation factor should be increased. ***Consider adding $650,000 contingency for possible rise in the rate of inflation.***
  - *Inflation Cost for Project Delay:* Should there be a delay in the start of construction, a one-year delay translates into approximately $2 million in added costs, based on CDM's estimated inflation rate of 2.5% per year. ***Consider adding $2 million contingency for possible 1-year delay in start of project.***
- *Dredging and Disposal:* The costs for dredging and disposal of sediments reflect current Boston area costs. Most of this cost is the disposal – trucking to a suitable, licensed landfill plus the tipping charges at the landfill, which is a fixed price.
  - *Cost of Project Delay:* CDM has estimated that the current average annual sedimentation rate in the Muddy River system is 2,500 cubic yards per year. Should there be a delay in the start of construction and additional sediment accumulates, the added cost to remove 2,500 cubic yards is approximately $500,000. ***Consider $500,000 per year allowance for possible delay in start of project.***
- *Phragmites Removal and Disposal:* The disposal costs reflect current Boston area costs. The removal costs are at the lower end what we might anticipate for actual constructed costs. ***Consider adding a $300,000 contingency for difficulties during construction regarding meeting environmental standards (particularly turbidity).*** Also, consider the removal methodology as a topic for value engineering reviews.
- *Culverts and Daylighting:* The basic unit costs (such as excavation, backfill, and precast units) are reasonable. However, this aspect of the project has the highest risk for added costs.

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[1] CDM accredits the inflation factor to Engineering News Record.

This higher risk is inherent in underground construction that involves sheeting, piles, utility support and relocation, removal of piles and obstructions, dewatering, and a high potential for unforeseen site conditions. In general, we recommend higher line items for handling the relocation of utilities (particularly the 48-inch water main) and the staged construction. In addition, there will be significant additional costs related to traffic maintenance, removal of obstructions, and coordination with adjacent projects that are not yet itemized. Finally, due to the added risk of underground construction, a higher construction contingency should be used. ***Consider adding $1million to over $2 million.*** Consider having BWSC participate in the costly work of relocating its 48-inch transmission main at Brookline Avenue. ***Could save in the order of $250,000.***

- *Replacement or Mitigation Planting:* These costs appear to be reasonable for the scope of work indicated on the landscape plans. The proponents should carefully review the scope of this work. These are significant costs that may be subject to further scrutiny. However, they do appear to represent a reasonable order of magnitude of work necessary to meet environmental and historic regulatory requirements.
- *Babbling Brook:* The $120,000 is double counted. It is included in the planting costs and as a separate line item. ***Reduce total estimated cost by $120,000.***
- *Structural BMPs:* In general, these costs are reasonable. We recommend moving one in-stream sedimentation basin out of the area of contaminated sediments. ***Could save approximately $300,000.***
- *Added Engineering Costs:* This estimate appears to be high. Much of the cost construction increase is in items that should not have a design or construction inspection scope increase (e.g., increased dredging and disposal costs). Likewise, some "structural BMPs" are incidental construction (e.g., in-stream sedimentation basins are simply overdredging) and there is no scope increase. ***Should reduce to $1.8 to $2.1 million from $4.1 million.***
- *Engineering and Project Management Costs:* There are opportunities to utilize state staff (if available) in lieu of consultant staff for construction inspection and related work. ***Could save up to $1.5 million.***Consider use of municipal (BDWP or BWSC) staff (if available) for design and construction inspection of the "structural BMPs based on results of initial BMP implementation," which would be located in the upper reaches of the watershed ***Could save up to $200,000.***

Other Factors to Consider:

- *Construction Packaging:* Alternatives packaging scenarios should be considered and compared, such as a single contract, two contracts or three contracts.
- *Bidding Climate:* It is possible that with the winding down of the Central Artery and other projects, contractors looking for work may bid more competitively. This situation should be monitored over the next year.
- *Quality of Materials*: Only 12% of the project costs involve materials that have a range in quality. Most of the work is dredging and disposal and unaffected by the choice of materials. The work involving materials is mostly planting, culverts and headwalls, as well as walkways. Much of this work is subject to environmental and historic regulations and no significant reduction in cost are currently anticipated.

Thus, our conclusion is that the estimated project cost could change by a net amount ranging from an increase of approximately $1.0 million to a decrease in the order of $300,000. In effect, the total estimated cost by CDM is a reasonable cost based on currently anticipated conditions.

Value Engineering:
The project should be subject to a value engineering analyses at various stages of design. Topics to be consider should include, but not be limited to, the following:

- *Phragmites* removal methods
- Culverts at the Riverway and Brookline Avenue, particularly utility support/relocation, traffic maintenance, and construction staging.
- In-stream sedimentation basins.

Muddy River Restoration Project

Review of Project Cost Estimate by Camp Dresser & McKee, Inc.

Basis for Review:

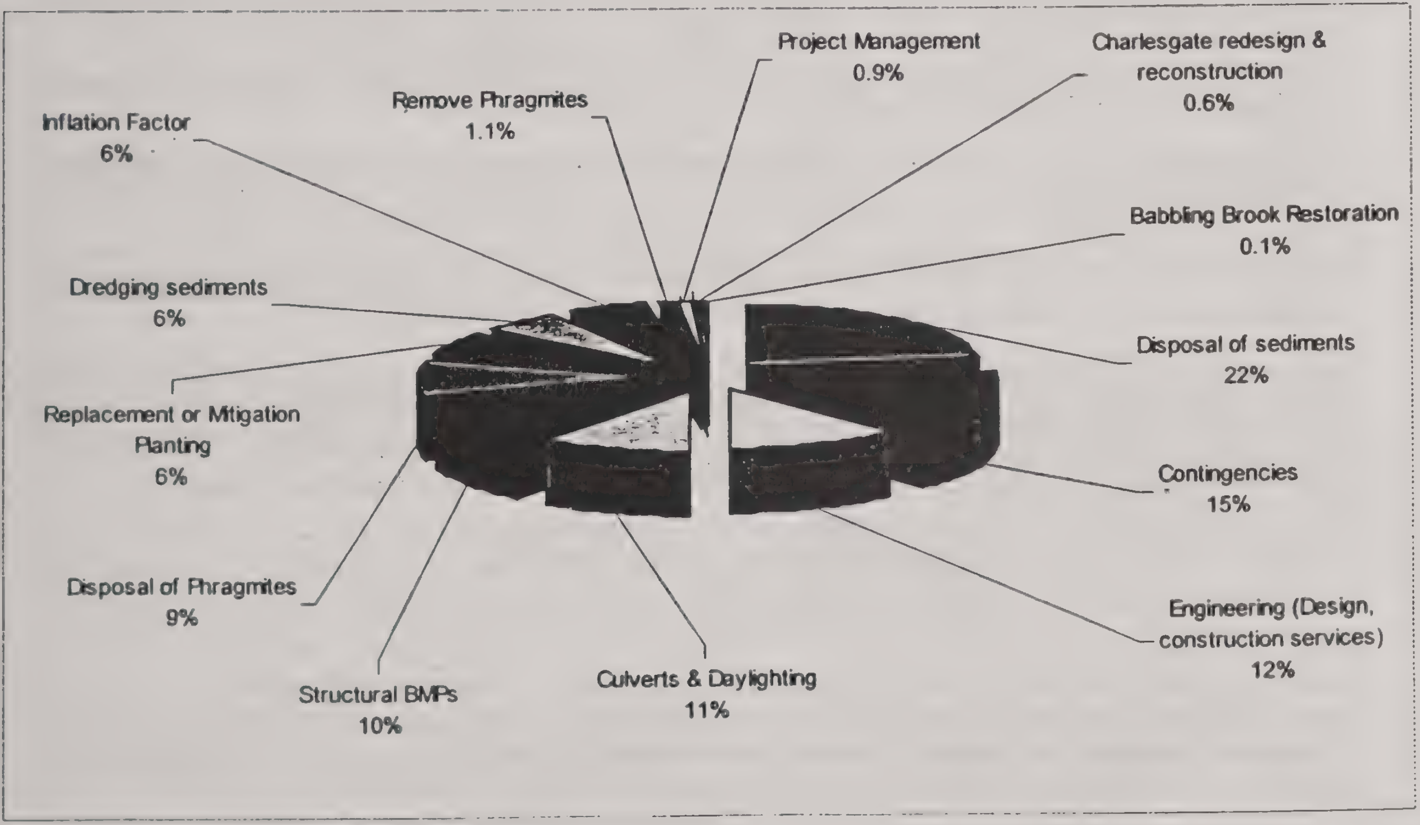
As requested by the Boston Parks & Recreation Department and Town of Brookline, co-proponents of the Muddy River Restoration Project, Parsons Brinckerhoff (PB) reviewed the construction cost estimate prepared by Camp Dresser & McKee Inc. (CDM), dated November 2000. The purpose of the review was to evaluate the appropriateness of CDM's approach and methodology used in developing the quantity takeoffs and cost estimates. PB also reviewed the basis of the actual unit prices as well as costing factors such as the inflation factor and contingencies. PB was not asked to perform a value engineering analysis or to critique elements of the "recommended project."

The CDM estimate is based on the "recommended project" as presented in the Citizens Advisory Committee (CAC) meetings of October 23 and 30, 2000 and the Public Information Meeting of November 8, 2000.

PB's review was performed by various senior staff familiar with heavy construction, handling of contaminated materials, and dredging.

Summary of CDM's Cost Estimate

A summary of \CDM's cost estimate is attached. The following chart illustrates the major items in the CDM cost estimate in order of magnitude of costs:



Review of Major Elements of CDM's Cost Estimate

Estimating Factors

Inflation Factor of 2.5% per year: This appears to be a reasonable figure for current economic conditions. One PB estimator noted he currently uses a factor of 2.35% per year. Other engineers and estimators currently use a figure of 3% per year. However, in recent months some economists have noted the signs of a possible rise in the inflation rate. Some indicators include the notching up of interest rates by the Federal Reserve, the recent spike in the price of fuel, and the current trend towards a rising foreign trade deficit. On the other hand, it is possible that the Federal Reserve may decrease interest rates to counter other inflationary factors. In summary, it would be prudent to consider the effect of a possible rise in the inflation rate.

Since the Charlesgate project is scheduled for advertisement in mid-2001, we believe the inflation factor of 2.5% is adequate for Charlesgate.

For the remainder of the project, the midpoint of construction is currently anticipated as 2003 or three years from now. The 2.5% factor (or approximately 8% for 3 years) is still reasonable for the remainder of the project, if one is optimistic that inflation will remain reasonably constant. However, if the project proponents wish a more conservative estimate to account for a possible rise in inflation, a higher factor, such as 9% or 10% might be chosen for the three-year period. The use of a 9% factor would add approximately $650,000 to the total cost estimate.

Sensitivity Consideration – Delay in Construction: At the rate of 2.5%, a one (1) year delay in construction would increase the total estimated cost by approximately $1.9 million, based on the current CDM estimate[2]. The proponents should consider a $2 million contingency per year of delay, since we believe it is reasonable to anticipate a possible delay in the start of construction or an extension of the construction period. This is particularly prudent in consideration of the current lack of a finalized funding plan and a fixed schedule for construction.

Design Development & Contingencies – General: Given the current level of design of 10-25%, it is common practice in construction cost estimating to add contingencies for:

- Additional incidental costs that may be identified as the level of detail in the design advances from the current 10% - 25% up to final design (100%).
- A contingency for added costs from contractor change orders and unanticipated conditions during construction.

For most of the work, we believe 35% is a reasonable factor to add at this level of design. One exception to this is noted in the section titled Culverts and Daylighting.

Design Development & Contingencies – Disposal Items: 20%: Although this factor is 15% lower than the factor used above for the other work, the lower figure appears reasonable, since disposal costs are not subject to further development of the design.

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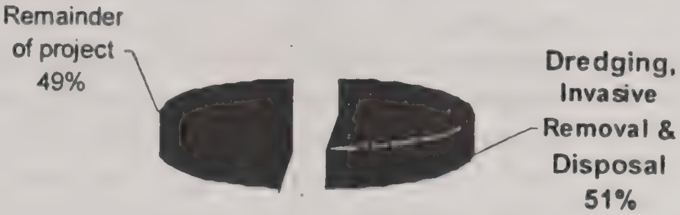
[2] Based on 2.5% of approximately $75 million, which represents the cost of the Muddy River construction contract.

Dredging and Disposal (including invasives species):

As the graph at right illustrates, dredging and disposal costs account for over 50% of CDM's project estimated costs.



Review of Quantity Take-Offs: Quantities are based on cross sections taken from the most recent survey. The quantities are close to, though somewhat less than, the quantities stated in the ENF. This difference can be attributed to the use of the more accurate data from the 2000 topographic survey.

Review of Unit Prices: Unit price costs for disposal are reasonable based on the actual bid costs on recent Boston area projects in which PB has been involved. These costs include transportation costs to the facility as well as the "tipping fee" charged by the disposal facility.

Disposal costs are fixed by factors beyond the control of the project. These include the availability of landfills that could accept the anticipated materials, the tipping fees charged by the landfills, trucking costs, and regulatory requirements on handling, transporting, and disposal.

CDM's assumptions in developing these costs are also reasonable, based on PB's experience:

- CDM assumes that all non-RCRA[3] material will go to out-of-state lined landfills. PB agrees with this assumption because the water content of the sediments from hydraulic dredging make it unlikely that any in-state facility would be willing to accept this material.
- CDM includes a separate unit cost for the disposal of RCRA material that is treated on-site to stabilize the lead content. This practice is acceptable to the Massachusetts Department of Environmental Protection (DEP) and the consultants have confirmed this method with Steve Lipman Special Projects Coordinator at DEP. This practice significantly reduces the disposal cost for certain RCRA materials. PB concurs with CDM's assumption on this matter.

Phragmites Removal: The costs presented reflect the removal method as described at the Citizens Advisory Committee (CAC) meeting of September 28, 2000, which involves a "water-based" operation. This includes the use of an excavator on a barge and other barges to transport excavated material to a staging area.

CDM presents the cost for this labor-intensive operation as approximately $28.40/cubic yard. Based on PB's experience with barged-based dredging, this figure is at the lower end of the range of expected cost (estimated in the range of $26 to $38 per cubic yard). The excavation of root mass and trapped sediments creates considerable turbidity and such construction operations may be closely reviewed by environmental agencies (e.g., Boston Conservation Commission, DEP, and Corps of Engineers). It is our experience that this level of review can lead to higher costs as the contractor may have to try experiment with different methods in order to meet turbidity standards. We believe a higher unit price would be more appropriate, if the "water-based" approach is maintained.

---

[3] RCRA is an acronym for the Resource Conservation Recovery Act, a federal law that defines a hazardous waste and its disposal. RCRA material is so-classified because the material contains one or more contaminants above the thresholds specified in Federal and/or State regulations. In the Back Bay Fens, lead is the contaminant that results in certain sediments classified as RCRA material. Non-RCRA material is material that does not exceed any of the thresholds.

We believe there are both cost and environmental factors that may favor a mix of land- and water-based work that would still meet the objectives[4] of the all-water-based approach. For example in the Back Bay Fens, there is sufficient width of *Phragmites* to create a work zone that would allow the excavator to be positioned on land. This work zone could be isolated by construction fencing from the Victory Gardens, major trees, and other resources. This approach would allow easier handling of root mass and sediments with the excavator. This could result in higher production rates and lower costs (potentially in the range of $100,000, assuming a $5 to $10 per cubic yard savings). This alternative should be explored as the design completion is advanced.

There are also seasonal constraints on *Phragmites* removal. The stalks and roots should be removed early in the growing season before the seed develop. This constraint may add cost. This should be investigated after design is advanced and when a preliminary construction contract schedule is developed.

Disposal of Phragmites: The unit costs for disposal of the root mass and related sediments are in line with the disposal costs for the dredged sediments. Where *Phragmites* are in areas of RCRA sediments, CDM assumes the disposal costs will be based on disposal at a RCRA facility, since the technique of lead stabilization may not be possible due to the high percentage of organic material. In summary, the basis for these disposal costs is reasonable.

Sensitivity to Changes in Disposal Prices: Due to the quantity of material, a change in the unit price of only a few dollars could have significant impact on the total project costs. For example, a change of $5/cubic yards translates into an additional $1 million (after contingencies and inflation).

Sensitivity to Changes in Dredging Quantity: Costs are also very sensitive to the actual quantities of material. For example, a change of 100 cubic yards on non-RCRA material translates into over $23,000 (after contingencies and inflation). At this rate, a change of about 4,400 cubic yards (or just 3% of the total currently estimated dredging quantity) translates into $1 million in the total cost estimate.

It should be noted that CDM currently estimates the average annual resedimentation rate at 2,500 cubic yards/year. This would add approximately $500,000 per year to the total cost estimate.

Cost Saving Measures Included To Date:

- On-site stabilization of lead in RCRA material to reduce disposal costs.

Opportunities for Future Cost Savings (at 50%, 75% or 90% design:

- Revisit the assumption that all non-RCRA material will go to out-of-state facilities. Explore the possibility of disposal at in-state facilities.
- Review recent bid prices during final design for disposal of similar materials to confirm the unit prices.
- Review the exact limits of dredging, particularly in the area of RCRA sediments.

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[4] These objectives include keeping construction away from the Victory Gardens, major trees, and other park resources. The objectives also include providing a direct route for transporting the root mass and sediments to the staging area.

- Better determine the quantity of root mass involved with *Phragmites* disposal. Is it all a dense mixture of sediment and roots or is some of it just root mass over open water? Also, verify the factor[5] used for converting in-place cubic yards of material to disposal material in tons.
- Consider additional sediment samples to verify the quantity of RCRA root mass in the Back Bay Fens. The RCRA root mass disposal is a major cost item, representing over $6.3 million. Even a small reduction in quantity could result in a lower cost. For example, a quantity reduction of 10% (about 1900 cubic yards) of RCRA root mass translates into $380,000 in reduced disposal costs.
- Discuss the approach to dredging with dredging contractor(s) to determine more cost-effective approaches to the dredging operation.
- Explore the details of invasive removal operations in each location.
  - For example, in Riverway locations such as the "Island Bridges," there may not be enough water to deploy barges for removal operations but the entire operation, including root mass removal, could be done from a bank.
  - In the Back Bay Fens, a value engineering comparison should be done of the water-based operation vs. a mixed water and land-based operation. In some areas, the swath of *Phragmites* is wide enough to utilize land-based equipment for excavation.

Culverts & Daylighting:

This element of work could be classified as heavy construction. Due to the underground work (excavation, piles, utilities, dewatering, and earth support) and the difficult traffic conditions, this element of the project contains a greater level of risk and uncertainty than the general construction operations. While some of this risk might be said to be included in the "design development and contingencies" factor, we believe that, as a whole, the 35% factor is not sufficient to cover all of the concerns raised below. Therefore, we recommend a higher factor, as noted below.

Review of Quantity Take-Offs: Quantities are based on standard estimating practices. Quantities for earthwork are based on cross sections taken from the most recent survey. We offer several comments on the quantities, as noted below in the elements of this work.

Review of Unit Prices: Unit prices are generally reasonable, with exceptions noted below in the elements of the work.

Review of Elements of Culvert and Daylighting Work: Following are comments on the estimating of various elements of the culvert and daylighting work.

Earthwork – General: Earthwork quantity estimating for daylighting is based on the cross-section method. A spot check revealed that the earthwork quantities appear to have been estimated adequately. Earthwork unit costs also appear reasonable, assuming "clean" soils.

There is, however, a large quantity of disposal material from the daylighting and culvert work. There should be an allowance for the possibility of encountering contaminated or hazardous materials as a result.

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[5] The typical factor used is 1.5 tons per cubic yard.

Underground Obstructions – General: The CDM estimate does not include a separate item for underground obstructions, such as the know items shown on record plans (e.g., piles under existing utilities, the foundations of the "triple-arch bridge," abandoned headwalls) as well as unknown obstructions.

Riverway Culvert:

- **Staged construction**[6]. We recommend that staged construction costs should be at least 25% to 30%, not 15%. Traffic volumes are high and we anticipate many restrictions on work (e.g., during rush hours, before/after games at Fenway, during events at nearby colleges, AIDS Ride, etc.)
- **Utilities.** We believe the utility support effort may be understated. While CDM does not yet have a design for this work, it is likely that the gas and water mains will require relocation to clear the new culvert.
- **Restoration** work should include street paving and curbing.
- **Traffic.** The estimate should include the temporary relocation of traffic lights for traffic staging and for final restoration. The traffic lights are very close to the proposed culvert location, and relocation is required. Traffic staging will likely require the removal of curbing, temporary pavement, temporary curbing, and other related items.
- **Construction Contingency.** The proponents should carry at least 15% construction contingency for the Riverway culvert construction work to cover unanticipated conditions. Consider increasing the 35% (design development & contingencies) factor to 40% for this location.

Sears Lot Daylighting

- The replacement of the **24-inch sewer** will require sheeting, dewatering and bypass pumping.
- The **police detail** cost, while needed for control of construction traffic in and out of the site, may be high. For now, keep cost as is, but review at next stage of design.

Brookline Avenue Culvert:

- **General:** This is the most difficult element of construction. There is a high risk of added costs due to underground conditions, utility issues, the 48-inch water main, and difficult traffic conditions.
- **Existing piles.** The costs for removal of existing piles (supporting the 45-inch and 51"x51" storm drains) should be added for the section where culvert construction will require their removal. This also applies for the existing piles in the footprint of the proposed connecting structures.
- **Staged construction.** Please refer to the recommendation above for staged construction at the Riverway culvert.
    - **Utilities.** We believe the utility support effort is very understated. While CDM does not yet have a design for this work, based on PB's experience, we anticipate a significant effort in this regard. The trench width will likely be over 30 feet wide, and all existing utilities will require supporting and possible replacement, if their condition is poor. This is a significant effort, beyond what can be attributed to "design development and contingencies." Please refer to our comment memorandum dated September 12, 2000.
- **48-Inch Water Main.** CDM does not yet have a workable concept. The estimate indicates a vertical offset under the new culvert – this is likely to be unacceptable to BWSC, since the

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[6] Staged construction refers to the fact that the culverts cannot be built across the busy roadways (Riverway and Brookline Avenue) in one stage. Rather traffic has to be shifted in stages to create work zones where excavation to install the culvert can occur. This need to build in stages adds to the construction costs.

main would be deep and inaccessible. As an alternative, CDM has considered a horizontal offset into parkland, passing over the culvert with a landscaped mound over it to provide cover for frost protection. This concept will probably not meet historic landscape standards. Without a workable concept, it is not possible to comment on CDM's estimated cost, other than that it appears to be significantly underestimated.

- **Raising Brookline Avenue.** CDM's cost estimate assumes a 2-foot rise in the street grade over the culvert. We find this cost to be inadequate. The square yardage indicated is inadequate to achieve the rise, based on MHD and BPWD design standards for profiles and vertical curves. A longer approach would be needed and this would considerably increase the quantity. This proposed grade change would have implications on the grading of the adjacent parklands, and this grade change may not meet historic landscape standards.
- **Restoration.** The estimate should include street paving and curbing restoration work.
- **Traffic.** The estimate should include modification, relocation and re-timing of traffic lights that will be required on a temporary basis for traffic staging and also for final restoration. Traffic staging will likely require the removal of curbing, temporary pavement, temporary curbing, and other related items.
- **Traffic – coordination with adjacent projects.** The Brookline Avenue work will likely be done while other major construction is underway at Fenway Park and the Longwood Medical Area. Close coordination among projects is essential. Our experience with a similar situation on Causeway Street tells us that changes in the schedules of adjacent projects may result in "changed conditions" for the Muddy River contractor, and, thus, added costs for the project. We recommend that an allowance be included for this very likely situation.
- **Construction Contingency.** The proponents should carry at least 15% to 20% construction contingency for the Brookline Avenue culvert construction work to cover unanticipated conditions. Consider increasing the design development/contingency factor from 35% to 40% or 45% for this location.

Cost Saving Measures Included To Date:

- Use of arch shapes versus box shapes for precast sections.

Opportunities for Future Cost Savings (at 50%, 75% or 90% design):

- Work closely with BWSC, historic regulators and CAC on a cost-effective approach to the 48-inch water main relocation.
- Removal of the "jug handle" ramp at Brookline Avenue could save a significant length of culvert. This has been proposed by others and will require approval by the Boston Transportation Department (BTD) and the Metropolitan District Commission (MDC).
- To facilitate the relocation/support of utilities, consider a shorter culvert section (perhaps 8 feet instead of the currently proposed 10 feet).
- Since the headwalls will be shaped as "false arches" to hide the actual culvert section shape, revisit the arch vs. box shape issue at 50% design to determine if there are any savings in the total cost estimate.
- Conduct value engineering at the next design phase for various elements, such as traffic staging, utility support/relocation, headwall design, culvert foundation design, general construction staging. The objective should be reducing the total estimated cost. Since time is the critical factor for work in Brookline Avenue, it may be possible to reduce total cost by decreasing the construction duration.

Replacement or Mitigation Planting:

These costs include planting and other landscaping (e.g., pathways) installed to repair the park due to construction activities, such as dredging, removal of invasive plants, staging areas, and daylighting and culvert installation, as well as to meet wetland and historic landscape regulations and requirements. This work also includes a two-year guarantee, which reflects the need for successful planting to meet regulatory requirements[7] and minimize the regrowth of invasive species.

Review of Quantity Take-Offs: Quantities are based on standard estimating practices. For shrubs, quantities are square feet while trees are measured per each. The quantities are verifiable and appear to represent what is shown on the current landscaping drawings.

Review of Unit Prices: Unit prices are generally reasonable. In several cases, the unit prices are higher than what we have seen on other projects. However, there are at least three factors that would tend to justify the higher unit prices:

- As noted above, this project includes the CAC's recommendation of a two-year guarantee, which adds a surcharge to the price per plant.
- The species chosen for this project differ from what might be found other projects with heavy massive plantings (e.g., highway interchanges, suburban office parks). The planting list for this project must follow historic and environmental regulatory considerations, which may lead to some more expensive species selections.
- Survival and sustainability are key for meeting the regulatory requirements as well as for preventing the re-growth of invasive species. This leads to the selection of larger materials, which tend to have higher survival rate, but also cost more on a unit basis.

The survival and sustainability issue involves costs that are both capital and maintenance. Different owners may choose different approaches to drawing the divide between what the contractor does and what the owner's maintenance forces do. Once the project maintenance plan is available for review, the topic of how to best draw that divide should be discussed. The cost exists in either case; it is a matter of drawing the line between the capital costs and the maintenance costs.

Babbling Brook: The landscaping for this work is double-counted. It is included in the "replacement or mitigation planting" for the Willow Pond and as a separate line item.

Opportunities for Future Cost Savings (at 50%, 75% or 90% design):

- Review in detail the landscaping work proposed in light of what is needed to replace impacted features and to meet environmental and historic regulatory requirements.
- Consider the cost/benefit of the proposed 2-year landscape maintenance and guarantee period.
- Review the proposed schedule to allow sufficient time for planting work to be done in its proper season. This will lead to higher survival rates and reduce the costs for replacement plantings.
- Consider the total quantity of plant materials vs. the capacity of local nurseries to supply the material within a given time period. If necessary, extend the length of time for the planting work.

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[7] For example, Orders of Conditions for Conservation Commissions typically require a multi-year guarantee that the replacement wetland planting survives.

Structural BMPs

In Stream Sedimentation Basins: These are constructed by dredging and the same unit prices are used as for the other dredging and disposal work.

Structural BMPs within the Project Area: These include the particle separators, adjusting of curbing and basins, and the swale at the Victory Gardens. These prices seem reasonable for the work as currently defined.

Structural BMPs – ("Structural BMPs based on results of initial BMP implementation"): These were estimated based on a preliminary review by CDM of suggestions in a report by the Center for Watershed Protection. There is no analysis to show that this set of structural BMPs would be effective. Rather, it is necessary to monitor the initial implementation of non-structural BMPs in order to determine where additional sediment control is needed. From such a determination, a set of structural BMPs can be developed and implemented.

While the exact set of these BMPs is not now known, the estimated figure of $1.9 million represents a significant commitment to structural BMPs in the upstream reaches of the Muddy River watershed. For now, this appears to be a reasonable figure for this category of structural BMPs.

Opportunities for Future Cost Savings (at 50%, 75% or 90% design):
- Review in detail the benefit of in-stream basins with regard to the longevity of the project benefits. Are all of them necessary to achieve the desired life of the project? This type of structural BMP is very costly, particularly for the disposal of sediment.
- Consider eliminating (or relocating) the in-stream sedimentation basins in areas of RCRA sediments.

Added Engineering Costs

We believe the added engineering costs are high. As presented by CDM, the increased engineering costs are linked to increased construction costs. However, many of the construction items that have increased in cost are either simply increased unit costs or incidental work. These items add no scope and, therefore, should add no engineering costs. For example, the added costs of dredging and disposal add no scope, so no additional engineering costs are justified. Likewise some of the "structural BMPs" are incidental construction (e.g., in-stream sedimentation basins, which simply involve over-dredging, and the wetland swale, which is a grading detail). For these items, there is no scope increase and, thus, no added engineering costs.

On the other hand, an item such as the more intense replacement/mitigation planting may add scope during both the design phase and resident engineering/inspection phase. These items need further review during negotiations to determine the true added costs.

Structural BMPs: We disagree with how the some of the engineering costs were calculated. We would classify the structural BMPs as falling into 3 categories:

1) Work that is integral to dredging operations (in stream sedimentation basins plus the wetland swale at the Victory Garden) is not a justifiable additional engineering cost. As currently designed by CDM, these basins are merely over-dredging and the swale is a grading and planting detail in an area that would be graded and planted in any case. These items should be accomplished at no additional design costs. In general, there also should be no additional construction administration costs, since the dredging quantities

with the sedimentation basins are not significantly different from the quantities (and, therefore, the construction duration) in the ENF and previous studies.

2) The "structural BMPs based on results of initial BMP implementation" are structures that will be installed upstream in the watershed, based on the monitoring of the initial years of BMP implementation. We recommend that BWSC and the Town of Brookline consider the use of their own staff or their on-call consultants for this design. These BMPs are spot improvements that are determined after monitoring of the initial non-structural BMPs. Their implementation may lag the design effort for the Muddy River restoration work. If these items are bid as a separate contract, bids may be high since these are small items spread over a large geographic area. As an alternative, we suggest that this work be implemented as "add-on items" to other BWSC and Brookline drainage construction contracts[8]. As such, we believe they would be best designed by the municipal agencies or their consultants who would be more familiar with site conditions at locations upstream of the river and parklands. These parties would also be more familiar with agency requirements and procedures. Once that is established, an appropriate figure can be estimated for design.
3) Other items include correcting MDC curbs and catch basins plus the particle separators within parklands near the river. First, it needs to be determined: 1) if all of these will be included in the Muddy River restoration design effort, and 2) if all of these will be included in the Muddy River Restoration construction contract. If they are included in the current design effort, the cost for engineering should be less than stated, as there is already a topographic survey with wetland delineations, CDM is familiar with the locations, and the areas will be covered by contract plans, so no added plans sheets are needed.

Other Opportunities for Cost Savings – Engineering & Project Management:
The following opportunities exist to reduce project costs by reducing the scope of work to be supplied by consultants:

- Construction inspection
- Construction records maintenance
- Structural BMP design (for locations upstream in watershed)
- Construction inspection for structural BMPs (for locations upstream in watershed)

Construction Inspection and Construction Records Maintenance: Considering the number of state and municipal agencies involved with and supporting the project, it may be possible to assemble a construction inspection staff including a resident engineer and inspectors[9]. This could reduce the level of effort from consultant staffs.

Municipal agencies, such as BWSC and Brookline DPW, also have experienced construction inspection staff. If the Project Maintenance Plan recommends the addition of municipal staff position(s) for post-construction maintenance, there is an opportunity to include such personnel in construction inspection and/or records keeping during the project's construction phase.

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[8] The structural BMP items would be eligible for funding through the Muddy River project. The exact details would need to be worked out after the details of the funding agencies and funding agreements are in place.

[9] EOEA agencies, such as MDC, or MWRA might be able to supply staff. Also, EOTC agencies, such as MHD or MBTA, might be able to supply staff "on loan."

If staff is available and if the costs of providing such staff can be funded outside the project, this option could offer savings over the cost of providing staff from the engineering and project management consultants.

Structural BMP Design and Construction Inspection: See discussion above regarding the possible use of BWSC and/or Brookline DPW engineers to design the "structural BMPs based on the results of initial BMP implementation." In addition, if the construction of these structural BMPs are included as a part of larger BWSC or BDPW drainage construction contract(s), the construction inspection of the BMP structures is just a small fraction of the overall inspection effort for the entire construction contract.

Other Factors

Construction Packaging

Currently, the proposal is for an early contract for Charlesgate (Ipswich Street to Charles River) and one large contract for all the work from Ipswich Street through Wards Pond. This large "Muddy River Restoration" contract includes three major types of work:

- dredging and disposal
- heavy construction-drainage & excavation (culverts and daylighting)
- landscaping

Construction packaging can have a significant impact on total cost. Potential benefits of increasing the number of construction packages include the increase of competition among potential contractors or subcontractors. For example, for dredging, the entire project may be beyond the resources of a single dredging contractor, so that splitting the project into two dredging contracts may foster competition.

Disadvantages include the added costs of bidding and managing multiple construction contracts, possible conflicts between contractors, and the added effort of coordination among general contractors. Another disadvantage of smaller contracts is getting a marginally competent contractor "low-balling" the bid and then performing poorly or attempting to recover costs through claims. Also, for dredging, there is a certain fixed cost associated with mobilization and demobilization of equipment. The more work that is done between mobilization and demobilization, the lower the unit cost per cubic yard for dredging. Finally, it may be desirable to get a large general contractor as the lead, as this type of contractor has staff familiar with the paperwork and "general provisions" of a major infrastructure project.

A matrix of possible packaging strategies with advantages and disadvantages is shown below:

Option	**Advantages**	**Disadvantages**
One contract	- Large general contractor - Minimizes construction administration & inspection work - One party responsibility	- May limit competition among dredging contractors - Puts 3 types of dissimilar work in one contract
Two contracts: A. Dredging & landscaping B. Culverts & Daylighting	- Separates heavy construction from "light" construction	- Additional costs for construction administration; - Potential schedule conflicts; - Potential scope conflicts
Three contracts: A. Dredging & landscaping: Back Bay Fens B. Culverts & Daylighting C. Dredging & landscaping: Riverway to Wards Pond	- Separates heavy construction from "light" construction - More opportunities for competition of dredging contractors	- Additional costs for construction administration - Potential schedule conflicts; - Potential scope conflicts

These options should be analyzed to determine if any of these strategies could result in a reduced total estimated cost.

Bidding Climate

Conditions in the construction market may impact the actual cost of construction. Generally, when there is an abundance of work, contractors will be less concerned with winning new work and will bid high. When work is scarcer, contractors will tend to be more competitive and bid low.

The main types of contractors that would be needed for this project include a dredging contractor (a specialty field not impacted by trends in general construction), trucking firms, heavy construction (excavation, culverts) and a landscaping contractor.

At this point, it is hard to predict the bidding climate in 2002, when the Muddy River Restoration work will be bid. Currently, major contractors are busy with the Central Artery, but by 2002, the Artery work will be in decline. Much of the MWRA water program will be completed, and it is likely that some of the current building boom will subside. These conditions could make for favorable bidding conditions, at least for the general construction work and trucking. The Boston area, however, will begin experiencing a great deal of building activity with the construction of the Convention Center and Fan Pier among other developments, as well as public infrastructure projects such as the Transitway.

Quality of Materials:

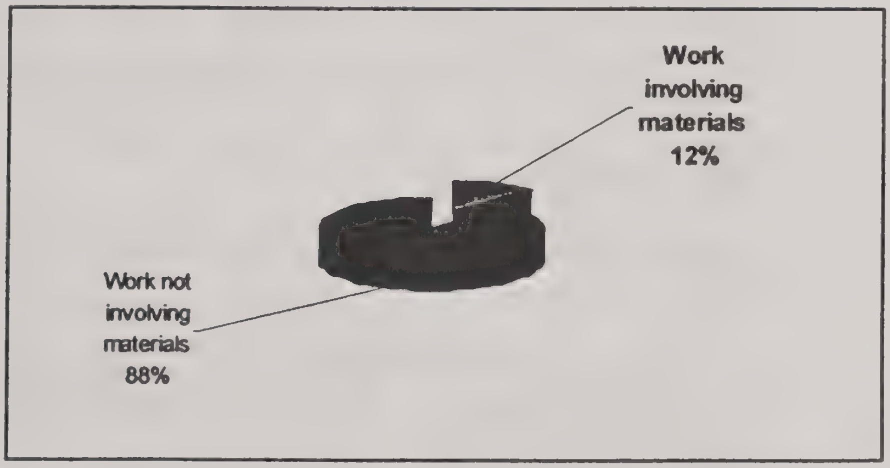
When analyzing project costs, a common question is whether the quality of the materials is appropriate. Are costly materials being used where a less expensive material could be used? To focus on this issue, we divided the project into items involving materials and items that do not involve materials.

Work involving materials:

- culverts
- headwalls
- plant materials (trees, shrubs, etc.)
- walks and paths
- drainage structures and structural BMPs such as particle separators

Work not involving materials:

- dredging
- removal of *Phragmites*
- excavation and daylighting
- disposal
- supporting and relocating utilities
- traffic control and police



As the graph indicates, most of the work is related to dredging, excavating and disposal work, which is not related to the quality of materials selected. Work involving materials is only approximately 12% of the cost.

Work involving materials can be divided into drainage structures (culverts, basins, structural BMPs) and landscape work (plants, headwalls, paths). The materials for culvert and structural work are determined by structural considerations. Since these elements will not be visible, they can be designed as utilitarian.

The choice of plant materials is determined by the historic consideration of using the planting palate of Olmsted with minor revisions. While some of these species are costly, the choice is driven by historic and wetland regulations. Nursery stock is chosen by the landscape architecture consultant to guarantee quality and increase survival rates. A less costly approach is the use of bare root material, but it has a high failure rate and would require significant management time to enforce contractor compliance.

As with the planting, the choice of materials and design of headwalls will also be based on historic considerations, namely, the materials chosen by Olmsted for bridges and headwalls. While simpler and less costly headwalls could be used, historic considerations will guide the design of headwalls.

For pathways, the materials will be the same as used in adjacent portions of the park. These include stone dust for walkways and bituminous concrete for bike paths. These are standard materials and are less expensive than other materials such as cement concrete, brick pavers, or concrete pavers.

In short, there are few cost items that are dependent on the cost of finish materials. For plantings and headwalls, the choice of materials is driven by historic considerations. For other items, only standard materials will be used.

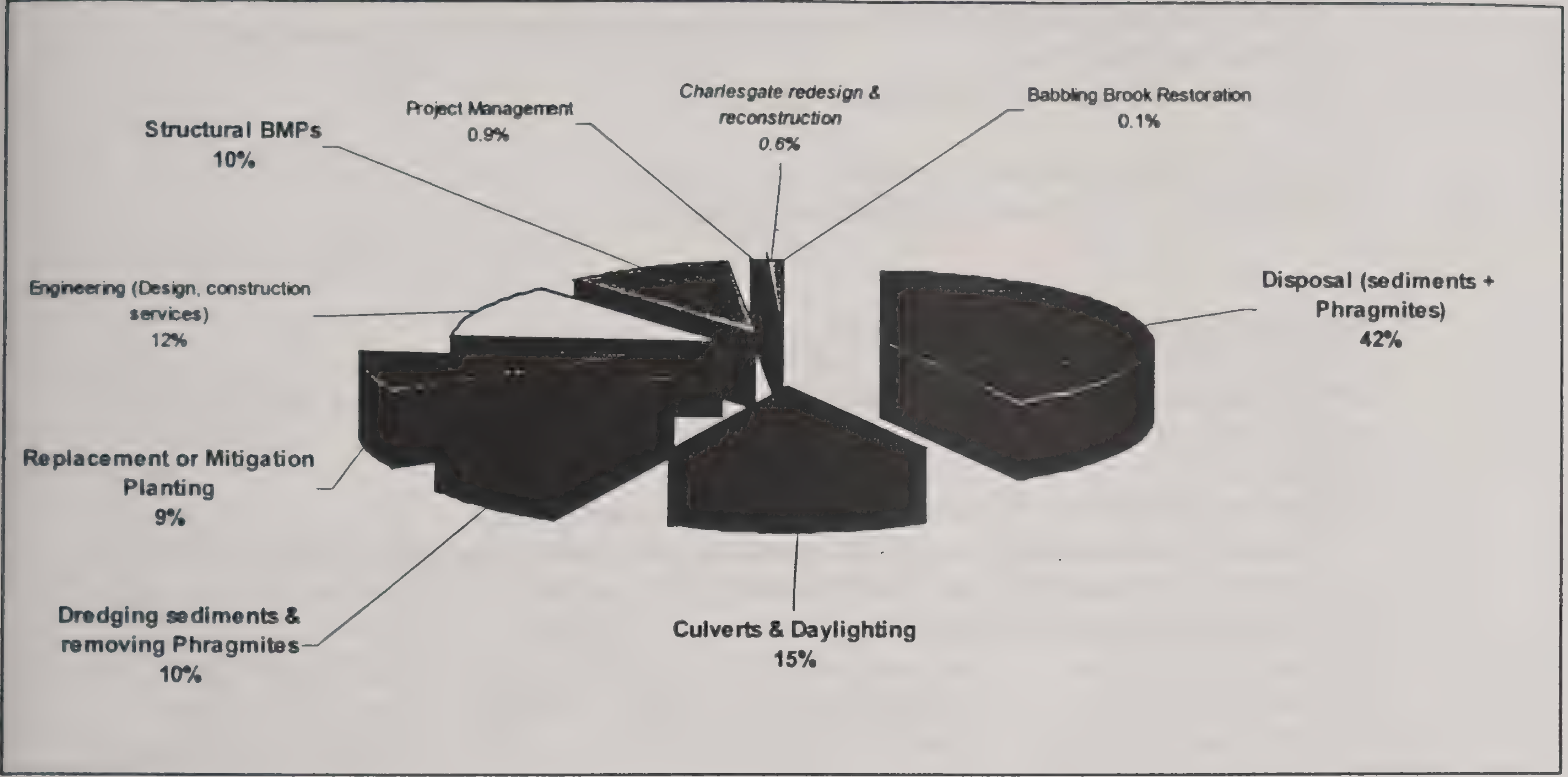
Risk Factors for Future Changes in the Cost Estimate

Understanding a cost estimate requires an examination of all the factors that could result in significant changes in the cost estimate. Not all of these factors are within the control of the project proponents and consultants. In addition, factors influencing cost are always changing, so no cost estimate is truly static.

Major Project Elements

There are different risk factors for each element of the project. We have identified five major elements as follows:

1. Dredging sediments and removal of *Phragmites* and other invasives
2. Disposal of sediments and *Phragmites* and other invasives
3. Replacement or mitigation planting
4. Culverts and daylighting
5. Structural BMPs



Dredging costs

Unit costs typically include many items, including mobilization of equipment, set up of staging operations and piping, operating costs, maintenance costs, estimated "down time" due to equipment problems, estimated duration of operations, removal of staging area equipment, restoration of staging areas, and general demobilization.

Risk Factors:

- Actual dredged quantities could differ from current estimated quantities
- Contractor could experience difficulties with equipment (e.g., excessive down time).
- Added costs of noise, air pollution, and other mitigation measures, particularly at staging areas.
- A needed staging area is not available due to currently unanticipated circumstances.
- Added costs of staging area restoration.
- Difficulties in handling the sediments can add time and costs.
- Intensive in-field inspection by regulatory agencies can add time and costs.
- The exact method of removal of invasive plants can add cost.
- Down-time due to weather can add costs.

Disposal costs

Unit costs for disposal are beyond the control of the project. Unit costs are based on the tipping fees at landfills plus the cost of trucking from the site to the landfill. The choice of landfills that will accept the material are based on DEP and EPA regulations. The other major factor in disposal costs is the transportation costs between the site and the potential landfill(s).

Risk factors:

- Actual dredged quantities could differ from current estimated quantities
- Closer landfills could close, increasing trucking costs

- New regulations for trucking and disposal
- More RCRA sediments could be encountered than currently estimated
- Tipping fees could increase
- Increase in fuel costs could raise trucking costs

The cost of disposal could also be reduced:

- Due to quantity, contractor could get better price

Replacement or mitigation planting costs

Costs are sensitive to the quantity of planting, the species of plants, the timeframe in which planting must be accomplished, the guarantee period, and maintenance requirements.

Risk factors:

- Final design could call for more work than currently anticipated.
- A planting schedule that is too tight or spread out over several years could inflate bid prices.
- A schedule that does not allow installation within the desired planting periods will add costs.
- The longer the guarantee period, the higher the planting prices.
- The addition of a long maintenance period (e.g., 2-years) will increase planting prices.
- Change in species (or size of plants) between now and final design could increase costs.
- High quantity of plants could strain the resources of local nurseries, resulting in higher costs to obtain plants from more distant locations.
- Restrictions on contractor access could add costs.
- Mitigation measures not now defined could add costs.
- Unfavorable weather conditions may delay work and add costs.

Culverts and Daylighting

Cost are sensitive to site conditions, particularly regarding traffic maintenance, hours of operation, and subsurface conditions including soils, groundwater and utilities.

Risk Factors:

- Unanticipated site conditions (surface or subsurface).
- Traffic issues with agencies and adjacent projects.
- Currently unanticipated costs related to the support and/or relocation of existing utilities.
- More police are needed than currently anticipated.
- The traffic staging plan may result in small work zones, adding to the cost.
- Archeological finds during excavation could delay work and add cost.
- See other comments in the section titled Culverts & Daylighting.

Structural BMPs

Costs are dependent on the type of BMP. For the in-stream basins, the work is dredging and disposal and the factors listed above apply. For BMPs such as particle separators, the factors are similar to those for the culvert work, as noted above. There are some additional risk factors associated with the "structural BMPs based on results of initial BMP implementation:"

- The actual number and/or type of structures may increase and the cost may exceed the currently estimated figure.

- Site conditions may add to cost, particularly if the actual locations of some of these structures differ from the currently anticipated locations.

Conclusions

The overall approach to preparation of the cost estimate is reasonable and in line with standard estimating practice. Most costs are reasonable, based on currently available data for the Boston area.

The following exceptions are noted:
- Consider adding $650,000 contingency for a possible rise in the rate of inflation.
- Consider adding $2.5 million/year for a possible delay in the start of construction (or a possible lengthening of the construction period).
- Add approximately $300,000 for removal of *Phragmites*.
- Add approximately $1.0 to $2.0 million for culvert work at the Riverway and Brookline Avenue.
- Consider BWSC participation in the relocation of their 48-inch water main at Brookline Avenue, saving approximately $250,000.
- Eliminate the double counting of the $120,000 for the Babbling Brook.
- Consider moving the in-stream sedimentation basins out of the RCRA material, saving approximately $300,000.
- Reduce the "additional engineering" costs by approximately $2.1 to $2.4 million.
- Consider use of state or municipal staff (if available) in construction inspection work, potentially saving up to $1.5 million.
- Consider use of municipal staff (if available) for design and construction inspection of the "structural BMPs based on results of initial BMP implementation," which would be located in the upper reaches of the watershed, potentially saving up to $200,000.

Thus, our conclusion is that the estimated project cost could change by a net amount ranging from an increase of approximately $1.0 million to a decrease in the order of $300,000. In effect, the total estimated cost by CDM is a reasonable cost based on currently anticipated conditions.

The project should be subject to a value engineering analyses at various stages of design. Topics to be consider should include, but not be limited to, the following:
- *Phragmites* removal methods
- Culverts at the Riverway and Brookline Avenue, particularly utility support/relocation, traffic maintenance, and construction staging.
- In-stream sedimentation basins.

Finally, the proponents should carefully review the scope of the replacement or mitigation planting. These are significant costs and may be subject to further scrutiny. However, they do appear to represent a reasonable order of magnitude of work necessary to meet environmental and historic regulatory requirements.

MUDDY RIVER RESTORATION PROJECT
CONSTRUCTION COST ESTIMATE BASED ON CONCEPTUAL DESIGN

	ENF Estimate			DEIR Estimate		
Charlesgate	Quantity	Unit Costs	Cost	Quantity	Unit Costs	Cost
Dredging	5600	$446.43	$2,500,000	4000	$59.56	$238,240 ㉝
Disposal				4000	$137.50	$550,000 ㉕
Miscellaneous						$0
Landscaping						$656,251 ①
Subtotal construction estimate			$2,500,000			$1,444,491
General conditions			$225,000			$0
Design Development / contingencies			$492,500			$423,072
Subtotal			$3,217,500			$1,867,563
Escalation 2.5%						$46,689
Total Charlesgate			$3,217,500			$1,914,252
Back Bay Fens						
Dredging	91102	$30.00	$2,733,080	79961	$35.06	$2,803,433 ㉞
Disposal -Non RCRA	84321	$79.87	$6,734,680	55646	$137.50	$7,651,325 ㉖
Disposal - RCRA	6700	$254.00	$1,701,800	24315	$187.50	$4,559,063 (55)
Remove phragmites				23474	$28.41	$666,896 ㊴
Dispose phragmites - Non RCRA				3977	$125.62	$499,588 ㉛
Dispose phragmites - RCRA				19497	$325.00	$6,336,525
Miscellaneous			$18,533			
Landscaping			$812,000			$2,162,058 ②
Fens Bridge						$514,410 ㊺
Daylight Upper Fens Pond to Back Bay			$2,000,000			$1,013,636 ㊹
Brookline Avenue Culvert / gatehouse			$2,419,874			$3,961,436 ㊸
Daylight Sears Parking lot			$2,580,220			$1,671,896 ㊷
Riverway Culvert						$2,534,804 ㊶
Subtotal construction estimate			$19,000,187			$34,375,069
General conditions			$1,710,016.83			
Design Development / contingencies			$3,743,036.84			$9,174,299.13
Subtotal			$24,453,241			$43,549,368
Escalation 8%						$3,483,949
Total Back Bay Fens			$24,453,241			$47,033,318
Riverway						
Dredging	30000	$30.00	$900,000	18430	$35.06	$646,156 ㉟
Disposal	30000	$80.00	$2,400,000	18430	$137.50	$2,534,125 ㉗
Remove phragmites				10047	$29.74	$298,798 ㊵
Dispose phragmites - Non RCRA				10047	$136.22	$1,368,563 ㉜
Miscellaneous			$6,185			
Landscaping			$275,905			$1,761,907 ③
Historic islands						$29,664 ㊻
Subtotal construction estimate			$3,582,090			$6,639,213
General conditions			$322,388.10			
Design Development / contingencies			$705,671.73			$1,738,321.28

Subtotal			$4,610,150			$8,377,534	
Escalation 8%						$670,203	
Total Riverway			$4,610,150			$9,047,737	
Leverett Pond							
Dredging	21788	$30.00	$653,640	21788	$35.06	$763,887	㊱
Disposal	21788	$80.00	$1,743,040	21788	$137.50	$2,995,850	㉘
Miscellaneous			$6,185				
Landscaping			$193,095			$774,799	④
Subtotal construction estimate			$2,595,960			$4,534,536	
General conditions			$233,636				
Design Development / contingencies			$511,404.12			$1,137,710.20	
Subtotal			$3,341,001			$5,672,246	
Escalation 8%						$453,780	
Total Leverett Pond			$3,341,001			$6,126,026	
Willow Pond							
Dredging	9670	$29.28	$283,100	5054	$35.06	$177,193	㊲
Disposal	9670	$78.86	$762,600	5054	$137.50	$694,925	㉙
Miscellaneous			$0				
Landscaping			$24,500			$523,245	⑤
Babbling Brook						$120,000	— allowance
Subtotal construction estimate			$1,070,200			$1,515,363	
General conditions			$96,318				
Design Development / contingencies			$210,829.40			$426,138.38	
Subtotal			$1,377,347			$1,941,502	
Escalation 8%						$155,320	
Total Willow Pond			$1,377,347			$2,096,822	
Ward's Pond							
Dredging	19340	$30.00	$580,200	15565	$35.06	$545,709	㊳
Disposal - Non RCRA	19340	$85.17	$1,647,200	14008	$137.51	$1,926,238	㉚
Disposal - RCRA				1557	$187.50	$291,938	(56)
Miscellaneous			$0				
Landscaping			$52,500			$160,160	⑥
Subtotal construction estimate			$2,279,900			$2,924,044	
General conditions			$205,191				
Design Development / contingencies			$449,140.30			$690,689.12	
Subtotal			$2,934,231			$3,614,733	
Escalation 8%						$289,179	
Total Ward's Pond			$2,934,231			$3,903,912	
Engineering cost			$3,100,000			$8,900,000	㊼
Less current engineering contract			$0			$6,735,000	
Additional engineering cost			$3,100,000			$2,165,000	
Grand Total with out structural BMPs			$43,033,470			$79,022,066	
Structural BMPs							
Sediment Weirs at Tannery and Village Brooks			$168,000				
Sediment Basins Dredging				21147	$35.06	$741,414	(52)
Sediment Basins Disposal -Non RCRA				17717	$137.50	$2,436,088	(53)
Sediment Basins Disposal - RCRA				3430	$187.50	$643,125	(54)

Structural BMPs based on results of initial BMP implementation		$1,947,231	– sum
Correct MDC curb /catch basins		$366,945	(51)
Wetland swale at Victory Gardens		$69,536	㊾
Three particle separators		$559,445	(52)
Particle separator at Chestnut St.		$200,000	– 211
Design Development / contingencies		$1,975,442	
Escalation 8%		$217,349	
Engineering cost		300k — $2,100,000	㊽
Total Structural BMPs	$168,000	$11,256,575	
Project Total with BMPs	$43,201,470	$90,278,641	
Charlesgate Surface Redesign and Reconstruction		$524,956	⑦

Des Dev / Conting total	$6,112,582
General conditions	$2,792,550

Des Dev / Contingencies = 35% on all items except dredging & disposal
20% on dredging & disposal items

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EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT AND HISTORIC PRESERVATION

DRAFT ENVIRONMENTAL IMPACT REPORT

Project Cost Estimate – Overview

January 9, 2001

Prepared by:
Camp Dresser & McKee Inc.

Prepared for:
City of Boston
Town of Brookline

The Project Objectives

The Phase 1 – Emerald Necklace/Muddy River Restoration Project is a complex and unique undertaking, which has brought together a broad coalition of public sector elected and appointed officials, business representatives, medical, educational and art institutions, residential neighbors and non-profit organizations. The project initiates the restoration of an internationally renowned historic landscape listed on the National Register of Historic Places and locally landmarked. In focusing on the ecological restoration of an urban river and park system, it will:

-Improve flood control by increasing the hydraulic capacity of the Muddy River;

-Improve water quality of the Necklace's waterways;

-Enhance aquatic/riparian habitat;

-Restore the landscape and historic resources; and

-Protect the public's investment by implementing "Best Management Practices" that will ensure longer-term protections as a result of the project work.

The Project's Progression

Over the course of the past 11 months, the communities of Boston and Brookline have worked with the Commonwealth of Massachusetts and numerous agencies, civic groups and consultants to lay the ground work for a Draft Environmental Impact Report (DEIR). These groups have included: the Massachusetts Congressional delegation, the US Army Corps of Engineers, the Federal Emergency Management Agency, the Massachusetts Emergency Management Agency, the Boston Water & Sewer Commission, The Emerald Necklace Conservancy, and consultants Camp Dresser and McKee Inc. (CDM) and Parsons Brinckerhoff. In addition, a Citizens Advisory Committee (CAC) has met 14 times since September 1999 and there have been two public information meeting as part of this process to ensure a fully scoped and informed process and project. The beginning of this process started with the development and submission to Massachusetts of the 1999 Environmental Notification Form (ENF), which incorporated the results of numerous studies dating back to 1996 and earlier. In response to the ENF, the Secretary of the Massachusetts Executive Office of Environmental Affairs issued on April 29, 1999 two Certificates: one for the requirements and scope for an EIR, and another establishing a Special Review Procedure. Since February 2000, CDM and their subconsultants have collected significantly detailed scientific data, extensive surveys, comprehensive historic documentation, and up-to-date hydrologic modeling data. This comprehensive additional information has offered better delineation of the engineering and restoration requirements for the project. The consultants have spent over 30,000 hours collecting this information. Also, enormous staff support has been provided by agencies within Boston, Brookline, and the Commonwealth, not to mention the significant contributions of time and expertise provided by volunteers, including but not limited to those serving on the Citizen's Advisory Committee. In addition, the U.S. Army Corps of Engineers and the USGS have collected new information that has been incorporated into the Draft EIR.

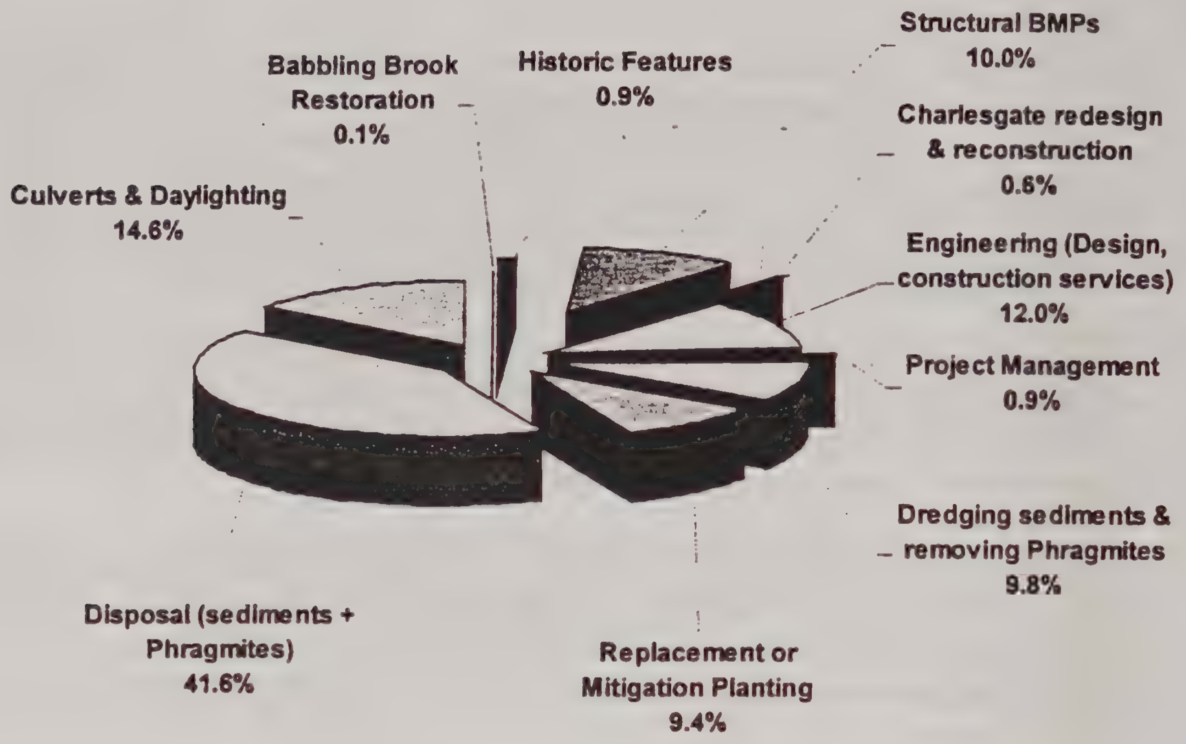
The result of this massive data collection effort has been to make the Draft EIR cost estimate more thorough, comprehensive, and accurate than any prior estimate. Significant differences in the approaches have uncovered new site conditions originally not understood. Some highlights include:

-Ten times more sediment data in the EIR (150 samples in addition to the original 15 samples). We now know that there is significantly more contaminated sediments that will need disposal. Overall, over 50% of the project costs lie in the dredging and disposal of sediment and invasive species (namely *Phragmites*). About 12% of that amount is solely sediment disposal.

-The detailed surveys, field investigations, and wetlands delineations revealed the rapid *Phragmites* expansion. Since the ENF was issued, the overall volume of this invasive species has grown. More importantly, engineering investigations show the *Phragmites* must be removed in two steps (one for the reeds, one for the root mass), instead of the single step originally assumed.

-Analyses show that water quality in the Muddy River is improving, and annual sediment loadings have been cut in half over the last ten years. Present estimates show that under present rates, re-sedimentation may occur in 50 years. By investing an additional $11 million in future improvements in the form of structural best management practices, the rate of re-sedimentation can be extended to over 70 years—just about a life time.

Subsequent pages describe the differences in costs between the ENF and the Draft EIR. The differences cover the full spectrum of project activities and objectives, including provisions for inflation, mitigation planting for areas that are disturbed, providing infrastructure to protect the public's investment, handling the enormous volumes of hazardous materials, restoring historic features, and addressing unforeseen problems once groundbreaking gets under way.



Summary of Project Costs[1]

Dredging sediments & removing *Phragmites*	8,980,000
Replacement or Mitigation Planting	8,640,000
Disposal (sediments + *Phragmites*)	38,133,000
Culverts & Daylighting	13,412,000
Babbling Brook Restoration	120,000
Historic Features	793,000
Structural BMPs	9,155,000
Charlesgate redesign & reconstruction	525,000
Engineering (Design, construction services)	11,000,000
Project Management	845,000
Total	**91,603,000**

Note:

[1] Cost items include inflation to mid-point of construction plus the Design Development/ Contingency factor. See notes on page 7.

DISCUSSION OF COST BREAKDOWN

1. **Structural BMPs** ($11,087,000 differential, includes engineering costs)
No significant structural BMPs were included in the ENF.

Cost Effectiveness.
The cost effectiveness of structural BMPs is that they help preserve the constructed project by continuing to improve sediment removal efficiencies in future years. The implementation of BMPs is a project objective and their importance is reinforced the Secretary's Certificate, which expressly requires structural BMPs and demonstration projects be included in the DEIR. The extent, nature, and type of structural BMPs has not been finalized. The cost estimate is based on known problem areas, BMPs consistent with a park setting, and an evolutionary approach that phases in BMPs as the engineering evaluations are completed and likely effectiveness is assessed.

2. ***Phragmites***—($9,172,000 differential)
First, there is a greater volume of *Phragmites* to be removed than estimated in the ENF. We conducted a detailed wetlands delineation with explicit survey points that determined the phragmites volume with greater accuracy. In addition, the *Phragmites* themselves have grown and invaded more area. Second, the cost of removal, disposal and refilling was not addressed separately in the ENF. Based on detailed engineering evaluations, *Phragmites* will have to be removed in two stages, one for the reeds, another for the root mass, thereby increasing costs. The ENF assumed the *Phragmites* could be removed in one step.

Cost Effectiveness.
Our estimates contain all costs associated with removing, disposing and refilling all past and newly grown areas of *Phragmites*. We intend to use excavator or cutter heads to remove the *Phragmites*.

3. **Replacement or Mitigation Planting**—($4,679,000 differential)
The ENF assumed disturbed areas would be merely re-seeded as lawn and emergent plant material, and no historic landscaping would take place. Through the CAC process and meetings with regulators, it has become apparent that meeting the project objectives of historic preservation and habitat enhancement in the context of current regulations requires a more intense planting effort. Therefore, the DEIR contains provisions to replace disturbed areas with historic landscaping and wetlands species consistent with the Emerald Necklace Master Plan.

Cost Effectiveness.
The planting plans are consistent with Olmsted's to the point practical. However, to minimize costs, the DEIR includes wider spacing between plants and use of less expensive indigenous plants and shrubs that provide the same visual effect but at lower cost.

4. **Remaining Project Elements (Dredging, Culverts & Daylighting)**—($4,818,000 differential)

The estimated cost difference of the remaining project elements (such as dredging and flood control infrastructure such as the daylighting at Sears Parking Lot) including engineering are lumped together in this category.

Cost Effectiveness.
CDM reviewed alternative approaches for dredging and multiple designs for improving flood carrying capacity. The approach and designs included in the DEIR are the least expensive alternatives that meet the project's objectives. Note that some reductions in total project cost might accrue via value engineering. CDM's experience suggests that any savings will be less than 10%.

5. **Disposal Costs**

Disposal costs include the removal of hazardous and non-hazardous sediments.

Hazardous Sediments—($3,149,000 differential)
The ENF sediment estimates were based on up to 15 samples collected along the entire length of the river. The DEIR estimates has the advantage of the data collected from 150 samples collected along the river (i.e., ten times more contaminant information). As a result, we estimate that there is significantly more hazardous sediment (6,700 cubic yards versus 25,870 cubic yards).

Cost Effectiveness.
Although the volume of contaminated sediment went up, we have actually worked to keep the disposal costs down based on our experience in stabilizing lead wastes on large-scale projects. The DEIR unit cost is $187.50/cubic yard compared to $254.00/cubic yard included in the ENF.

Non-Hazardous Sediments—($2,514,000 differential)
Although the quantities of non-hazardous sediment is slightly lower than those estimated in the ENF, the unit disposal costs are significantly higher ($79.87/cubic yard in the ENF versus $137.50/cubic yard). The ENF unit cost is much lower than today's market conditions—perhaps the unit cost reflected only the tipping fee and excluded the cost of transport.

Cost Effectiveness.
CDM's unit costs are based on hard bid data obtained on the Central Artery Project. Our unit cost reflects a rate recently negotiated by contractors at landfills for similar sediment volumes with similar physical characteristics.

6. **Historic Features**-- ($287,000 differential)
The repair of the Fens Bridge and historic islands is an additional item in the DEIR that was not considered or included in the ENF and also goes toward meeting the historic preservation objective of the Secretary's Certificate.

Cost Effectiveness.
The cost estimate reflects the most up to date prices for work of this type.

Notes Regarding Design Development, Contingencies and Inflation Factors
Cost items include inflation to mid-point of construction plus the Design Development/ Contingency factor.

Inflation Allowance—($5,099,000 differential)
The calculated cost of inflation from the DEIR stage to the estimated mid-point of construction has been added to the construction cost at a rate of 2.5% per year. The ENF included no inflation cost. Inflation is schedule-dependent, so as the project gets delayed, construction costs will continue to rise.

Cost Effectiveness.
The rate we used is based on present construction industry rates for time and materials, and was validated by Parson's independent review.

Design Development and Contingencies—($7,477,000 differential)
Relying on 50 years of experience on complex projects of similar size, CDM recommends an allowance of this proportion (approximately 19% to 22% of project cost depending on river segment), especially since we are only at the conceptual design stage (i.e., only about 20% of the project has been designed).

Cost Effectiveness.
The overall percentage falls on the low range of values typically used for projects of this magnitude. Examples of unforeseen problems that could be encountered:

-Changed underground conditions, such as undisclosed utilities in the project path, or soil and rock conditions that are different between boring locations;

-Weather or storm delays that extend project schedules and present flood flow handling problems;

-Quantity estimate changes, wherein actual quantities of some contract items vary from the engineer's estimate;

-Changes in scope, such as having to replace a catch basin that was originally thought to be structurally sound but wasn't;

-Changes in groundwater levels, requiring greater dewatering and impeding project progress;

-Changes in the construction "environment," whereby local citizens take issue and complain about the contractor's operations, necessitating changes in operations, conditions or operating hours. (An extreme example of this is the barging of people and materials to the Deer Island Treatment Facility at considerable extra expense to address Winthrop's residents' concerns about local traffic.)

MEMORANDUM

DATE: February 6, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

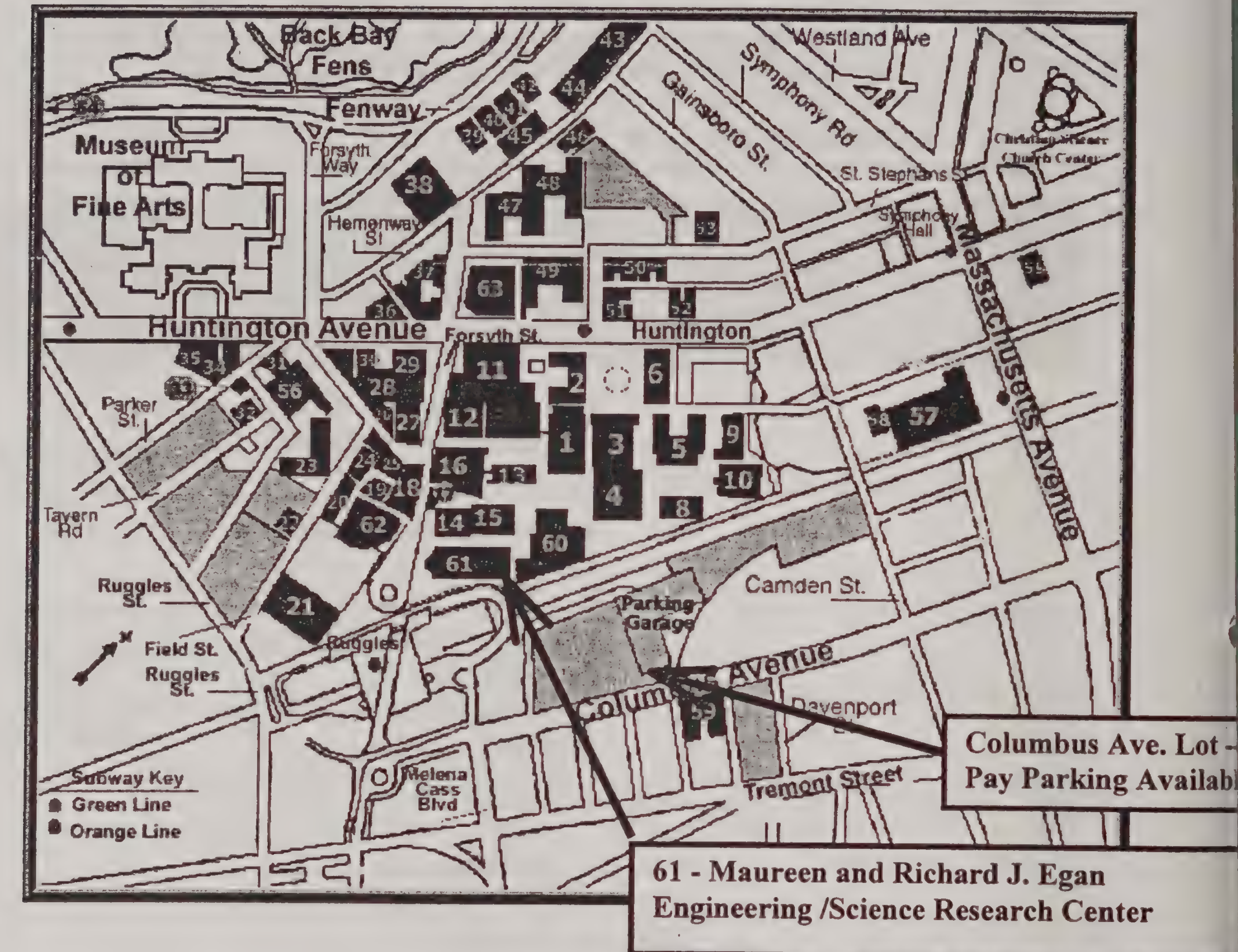
RE: Upcoming Meeting Schedule

Schedule of Upcoming Meetings					
No.	Day	Date	Time	Topic(s)	Location
15	**Mon.**	**26-Feb-2001**	**6 PM**	**– Construction Cost Estimate – continuation of discussion** **– Overview of Draft Environmental Impact Report (EIR) outline**	**Egan Center** **Northeastern Univ.**
16	Wed.	14-Mar-2001	6 PM	– Discussion of How the CAC will Review the Draft EIR – Scheduling of Meetings to Review Draft EIR	Faculty Center, Kerr Hall 96 The Fenway Northeastern Univ.
Note: Additional CAC Meetings will be scheduled.					

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to
Maureen and Richard J. Egan Engineering /Science Research Center
Raytheon Amphitheater -- Room 240
NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot -
Pay Parking Availab

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee

Northeastern University, Egan Engineering /Science Research Center

Raytheon Amphitheater — Room 240

Monday, February 26, 2001
6:00p.m. - 8:30p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:30

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

***John Burckardt**, PE, Project Manager*

II. **Project Update – Consultant's Report** 6:30 – 6:40

***Bruce R. Conklin, PE,** Vice President*
Camp Dresser & McKee Inc.

III. **Discussion** *(continued from January 25, 2001 Meeting)*:
Overview of Project Elements and Construction Cost Estimate

Q&A/Discussion with CAC 6:40 – 8:00

***Bruce R. Conklin, PE,** Vice President*
Camp Dresser & McKee Inc.

IV. **Overview of Draft Environmental Impact Report** 8:00 – 8:20

***Bruce R. Conklin, PE,** Vice President*
Camp Dresser & McKee Inc.

V. **Questions and Answers (General Public) Wrap Up** 8:20 – 8:30

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – February 26, 2001 CAC Meeting

Northeastern University, Egan Engineering/Science Research Center
Raytheon Amphitheater — Room 240

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I **Welcome, Opening Remarks & Comments Received**
Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator
John Burckardt, P.E., Project Manager

II **Project Update**
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

III **Discussion (*continued from January 25, 2001 meeting*):**
Overview of Project Elements and Construction Cost Estimate

Q&A/Discussion with CAC
Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc

IV **Questions and Answers (General Public) Wrap Up**

Summary

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian opened the meeting. John Burckardt informed the CAC that this meeting marked one full year of CAC meetings. He also stated that letters had been received from Hugh Mattison and George Hagerty. Mr. Mattison's letter, which was sent to the Executive Office of Environmental Affairs (EOEA), addressed the subject of goose control. Mr. Mattison asked if there were members of the CAC who would be interested in assisting on this issue. The CAC expressed interest but first wanted to collect information on what other agencies are doing to control geese. Pat Austin of the Metropolitan District Commission (MDC) was listed as an excellent source given the work the MDC has done to protect Quabbin Reservoir from the problem. Mr. Burckardt stated that he would follow up with the MDC and obtain any information. Mr. Hagerty's letter raised specific issues on the cost estimates, which were discussed later in the night.

II Project Update

Mr. Conklin summarized project status. Last month the Client Group provided comments on the first draft of the Environmental Impact Report (EIR), which the consultants are presently addressing. Mr. Conklin said that he would be going through the outline tonight after the discussion of the costs and project elements was completed.

III Discussion

The first issue to be discussed was a question from last month's meeting: Could we reduce capital costs by spending more on Best Management Practices (BMPs)?

Mr. Conklin responded by showing a PowerPoint slide showing some examples of BMP costs versus capital costs. The cost per cubic yard to re-dredge once sediment reaches the river is from $180 to $218 per cubic yard. By contrast, it costs $170 to clean a catch basin containing approximately 0.5 cubic yards of trapped sediment (a realistic estimate given data provided by Brookline and Boston). Therefore, the cost of removing sediment from the catch basin would be $340 per cubic yard.

CAC comment: It is unacceptable to make a case for allowing the sediment to fill in portions of the river and then re-dredge. We should be thinking in terms of sustainable development and need to push the project in this direction.

CAC comment: Olmsted actually planned on doing dredging.
Do the costs cover site restoration after disturbance? What about the costs of resource impacts that may not presently be quantifiable?

Mr. Conklin responded that the costs per cubic yard are only the dredging costs, which are based on actual bid construction costs.

CAC comment: We need to put the $90 million cost in perspective. We need to know what other towns and cities are spending on street sweeping, catch basin cleaning, and mowing to demonstrate that our costs are in line with what others are doing. Right now, we do not have a dedicated crew for these activities.

Mr. Conklin responded that the Management and Maintenance Plan will lay out what the annual costs of a well-funded maintenance plan should be. The Memorandum of Understanding suggests a cost sharing of these costs is the present thinking, instead of dedicating a crew solely for the Emerald Necklace. A dedicated crew could be considered as an alternative for the future.

CAC comment: The Brookline Master Plan recommends that sediment traps should be cleaned out every two years. Are we examining what is actually taking place in the communities and whether standard practices are being met.

Mr. Conklin responded yes, those issues are being examined particularly catch basin cleaning and street sweeping.

CAC Comment: We need to keep in mind that the Muddy River is no longer a natural system, but an "artificial" system.

The discussion turned to specific issues identified in Mr. Hagerty's letter on costs.

Item 1b-Coordinators Office. The letter recommends forming a separate management and maintenance team for the Emerald Necklace.

Mr. Conklin responded that there is a need to look at every facet of the park, patterns of use, how trucks empty trash, equipment needed, dedicating crews, etc. These facets need to be summarized, and have costs assigned to them to demonstrate to that the municipalities understand the resources that are needed, and are willing to commit the $1 million or $2 million required, especially in light of competition for funds for schools and hospitals.

CAC comment: The National Park Service has done a lot of research on these issues (e.g., how to stop trampling and erosion at Gettysburg Civil War site). We should collect what information is available.

CAC comment: The park needs a "management voice"—responsible for scheduling maintenance, tracking progress, and identifying labor and equipment requirements.

CAC Comment: Perhaps, the Emerald Necklace Conservancy could make it their role to provide that type of coordination.

CAC Comment: Louisville, KY has a park system that is jointly managed by the city and the county. They have completed some remarkable restorations. There are models to go by that address the kind of management system we are discussing for the Emerald Necklace.

CAC Comment: A discussion needs to take place about what the best management system is, and what the project should consist of. To date, engineers have led the discussion, and the larger issues require input from a much wider spectrum of people than are present in the room. How will we pay for this? We didn't have the money when the project was believed to cost $40 million. How will we pay for a $90 million project. Perhaps, we should scale back and consider a smaller project.

CAC Comment: We need political activity and advocacy. How do we convince people that this project has long term public interest. We have to make people be aware that we have a responsible program in place to protect the public's investment.

Susan Jeghelian asked if the CAC wanted to table this issue until April. It was agreed to table the issue until then.

CAC Comment: This project is primarily a flood mitigation plan. We need to develop a fall back position. If push comes to shove, where is there fat that we can trim?

Mr. Conklin responded that there may be savings with the "jug handle" improvements, depending on the configuration. The project will cost less if the jug handle improvement requires a shorter culvert. Note that there will be some offsetting added costs because the daylighted section would be longer.

CAC Comment: We need to be careful to balance the Corps of Engineer's mandate with respect to flood control and aquatic habitat restoration with the need for historic restoration.

Item 3—Replacement or Mitigation Planting. Mr. Hagerty's letter raised the issue of what was meant by the term planting consistent with Olmsted's "to the point practicable."

Marion Pressley responded that the consultants have inventoried all the existing plants. The preliminary drawings in the draft EIR do not include plant lists, but rather, plant massing diagrams showing where low, middle and tall shrubs should be placed. LEC has gone over the diagrams and made recommendations on what specific plants should be considered for wetland areas. Overall, a large list of plants exists from which specific species will be selected. This list is included in the draft EIR. To provide costs for planting in the draft EIR given that specific species have not been selected, Pressley Associates picked some "typical" plant types and assumed a level of appropriate spacing. Costs were developed from present nursery prices and were based on square footage. Low shrubs are typically 12 inches to 18 inches high. Medium shrubs are typically 24 inches to 36 inches high. Note that the cost of mass plantings (i.e., buying in bulk) is less expensive than replacing individual plants. For individual plants, take the wholesale price and multiply it by a factor of 2.5. To increase the contractor's maintenance and replacement period to 2 years, take the wholesale price and multiply it by a factor of 3.0.

CAC Comment: What is considered "maintenance?"

Ms. Pressley responded that a contractor will guarantee his plantings up to a specified period, depending on the contract. During that time, the contractor will water and fertilize, and replace any plants that die. We have listened to the CAC and have heard the strong message that maintenance must be included in everything—including plant care. The costs presented in the draft EIR reflect this.

CAC Comment: To what degree does the Maintenance and Management Plan consider training park maintenance staff? Will they be in a position to take over in two years and provide adequate care? Is specialized training needed (e.g., as to how grass should be mowed)?

Ms. Pressley responded that things have improved significantly since 1998. Brookline now brings in tree specialists. Boston has recently hired a horticultural group.

CAC Comment: Who negotiates the terms with the contractor to determine what needs to be replaced?

Mr. Conklin responded that the Clerk of the Works or Resident Engineer will direct the contractor to replace dead plant material in accordance with the terms and conditions in the specifications.

CAC Comment: This project is a model one of enormous scale. There is an advocacy element that Boston and Brookline and the MDC need to develop: pride of job. The parks' staff is not as highly respected as the original caretakers are.

Fran Beatty responded that Commissioner Liff has taken steps to improve pride of job, particularly in hiring the horticultural crew whose focus will be on Franklin Park and the Emerald Necklace. The Parks Department is optimistic that things are improving and will continue to improve.

CAC Comment: We need four Bernie Lynches! How much does Roy's horticultural crew cost? We are pleased that the consultants are speaking with the horticulturists on both sides of the river.

Mr. Carl Noyes of Cortell Associates responded that the Management and Maintenance Plan contains answers to how much more additional funding is needed. For example, the Boston needs to hire four more laborers.

CAC Comment: Will costs for plantings be broken out separately?

Mr. Conklin responded yes. In fact, a separate cost estimate is provided for each river segment.

Item 5a—Hazardous sediment. Mr. Haggerty's letter raises the issue of identifying the potential source of lead contamination near the Victory Gardens given the high cost to remove and dispose of the sediment because of lead toxicity.

Mr. Conklin responded that the consultants have tried to examine the likely sources of lead found in different areas of the watershed, concluding that a possible source is likely urban runoff from automobile exhaust. The source of the high lead measured near the Victory Gardens is uncertain. We should use the water quality monitoring program identified in the Maintenance and Management Plan as a means of assessing lead levels in the water. If the lead source is automobiles, then we expect concentrations to decline given that leaded gasoline is no longer used. An increase in lead concentrations would suggest that maybe fertilizing and pesticide practices in the Victory Gardens may be the source.

CAC Comment: People are fishing in the river. Is there a risk of exposure if people eat the fish?

Mr. Conklin responded yes. Fish are ingesting contaminants so people that eat the fish are being exposed.

CAC Comment: Have the folks in the Victory Gardens analyzed any samples for lead?

Mr. Conklin responded no, but the consultants and Boston Parks and Recreation met with the Fenway Garden Society. They are interested in determining whether they are a cause of the lead problem in the sediments.

CAC Comment: What is a bioretention area? Will it contain sand? Or are we using a different definition of bioretention area?

Mr. Conklin responded that we are not using the classic definition. There will be no subgrade sand layer because the groundwater table is too high.

Item 6 in Mr. Hagerty's letter refers to the inflation rate. The costs are based on a 2.5% inflation factor. Is this realistic and what hedge does it provide? Shouldn't we use a higher rate?

Mr. Conklin responded that the rate is appropriate and based on current cost indices. A 5% allowance for inflation would add $500,000 to the cost of the project. In general, the 2.5% rate is not that conservative. The issue is how high do we want to make the cost estimate go, as we begin discussions with the funding sources.

Item 7 in Mr. Hagerty's letter addressed the number of construction packages assumed for the project.

Mr. Conklin stated that the consultants assumed 3 construction packages.

CAC Comment: What percentage of the project costs is for flooding versus historic restoration and habitat restoration?

Mr. Conklin responded that the costs for each are broken out by river segment in the Draft EIR.

Mr. Conklin proceeded to walk the CAC through an outline of the Draft EIR.

IV Questions and Answers (General Public) Wrap Up

Other comments included:

A comment was made that the issue of enforcement is a real concern. What is in place now to ensure BMPs will be implemented and maintained? What recourse is there if agencies are not doing their job?

Betsy Shure-Gross of the Executive Office of Environmental Affairs (EOEA) responded that the CAC could define the reporting requirements as part of the MEPA process. Issues with enforcement and implementation of BMPs can be identified in the Annual Update to the Secretary.

Next Meeting

The next meeting of the CAC was scheduled for March 14, 2001 and will focus on the elements of the report and setting a schedule for review. Laura Rome will attend this meeting to answer any questions about the MEPA process.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 –Letter from Mr. George Hagerty dated 02/19/01
Attachment 3 – Outline of Draft EIR

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

February 26, 2001

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	Margaret Dyson
Frances Allou	Gershwin	Mahoney, Hawkes & Goldings	Frances Allou Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	

Emerald Necklace Citizens Advisory Committee

Meeting

February 26, 2001

Sign-In Sh

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	A A Levee
John A.	Martin	Emerald Necklace Conservancy	John Martin
Hugh	Mattison	Friends of Leverett Pond	hm
Lauren	Meier		Lauren H. Meier
Paul	Mentag	Fenway Alliance	Paul Mentag
Mary Crain	Penniman	Charles River Watershed Association	Mary Crain Pennim
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Emerald Necklace Citizens Advisory Committee

Meeting

February 26, 2001

Sign-In Sheet

\\parksmail\bospark\Muddy\CAC Meetings\CAC-15 Feb 26 2001\[CAC Sign-in Feb_26_2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
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Betsy Shure Gross	EOEA	617-626-1117	
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[illegible] Fluery	Member Garden Soc. 95 Park Dr.	617-266-1169	
John Burckardt	PBOD / Bostn Parks	617-635-4505x6517	jburckardt@ci.boston.ma.us
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Marion Pressley	Pressley Assoc. Inc	491-5300	
Adam Kahn	Brookline Con Com		
Bruce Conklin	CDM		
David Noonan	CDM		
Dave Langseth	Northeastern		

ATTACHMENT 2

GEORGE HAGERTY
FENWAY STUDIOS
No. 402
30 IPSWICH STREET, BOSTON, MA 02215
617-247-3508
781-344-9564

Mr. John Burckardt
Project Manager
Muddy River Restoration Project
Boston Parks Department
1010 Massachusetts Avenue
Boston, MA 02118

February 19, 2001

Dear John:

Enclosed are my comments on the "Project Cost Estimates – Overview" dated January 9, 2000 and provided to members of the Citizens Advisory Committee (CAC) by Camp Dresser & McKee Inc., (CDM) in preparation for the February 26th CAC meeting. I will quote their subject headings and include page references, as well as commenting on the Parsons Brinckerhoff (PB) review of same.

Pg. 5

1. Structural BMPs

"…Secretary's Certificate, which expressly requires structural BMPs …" "The extent, nature and type of structural BMPs has not been finalized."

a) When will this list of information be finalized, with the attendant costs?

b) I would like to take this moment to reference Richard Heath's letter to you, dated November 20, 2000 and provided to all CAC members. In it, he proposes an Emerald Necklace "coordinators office" of up to five people to form a separate management and maintenance team for the future of the river and parkland as a BMP. Though seemingly out of the flooding and water-quality scope of the Muddy River Restoration Project per se, I do believe that the history of ineffective maintenance and upkeep by the City of Boston, Town of Brookline and Metropolitan District Commission of Olmsted's Muddy River park system need to be addressed as a BMP issue. I think this should be fully costed out and proposed in the DEIR as Mr. Heath suggests. If this cost is decided by the CAC to be prohibitive, at least the DEIR may act in an advocacy capacity to suggest this as a future remedy for the current system of management and maintenance.

Pg. 6

(Con't) 3. Replacement or Mitigation Planting

Cost Effectiveness

"...consistent with Olmsted's *to the point of practical*."

a) Who determined this qualitative assessment of planting material?

"...DEIR includes wider spacing ....use of less expensive indigenous plants and shrubs..."

a) This is the first time I have heard of this re Marion Pressley and the historic replanting she has been working on. Can we cost out actual spacing and similar plant material unit costs as per Olmsted's list and the 1999 Master Plan as I thought was being done by Marion? Though the CAC may concur with CDM's statement in the DEIR, it would be useful to know the added costs incurred by following the historic plans to the letter (as practically as possible).

4. Remaining Project Elements (Dredging, Culverts & Daylighting)

Cost Effectiveness

a) Can we add the cost (or savings) for removing the "jug-handle" at Brookline Avenue? Though we may not get the necessary approvals from the MDC and BTD, the potential cost (savings) may in fact help leverage the removal of these intrusions into the park system. Parsons Brinckerhoff recommends this costing well on page 11 of their Review.

5. Disposal Costs

Hazardous Sediments

a) Can we add costs for a scientific/engineering investigation into the reasons for the spike in lead contaminated sediments at the Back Bay Fens? Since they have been identified (and almost *exclusively* located) in this area, and represent such a large percentage of the disposal costs due to their hazardous nature (approx. $20 million of the $47 million Back Bay Fens cost – 55% of total project solids disposal costs), might it make sense to determine the *reason* for their presence in such quantity? It seems sensible to me that if we were to spend the money to determine the reason for their presence now, we may be able to conclude that no further action is necessary for future abatement (i.e. this dredging will permanently remove >90%{?} and no new Pb sediments are likely to accumulate). On the other hand, if we don't take a look at their route of arrival into the Muddy River now, then we may be faced with even higher disposal or treatment costs in the future (albeit 50-70 yrs if all BMPs are enacted). If the cost for this determination is to high, the CAC may disregard this added cost, but it would be helpful to have the choice. I must add that due to the extremely active human use of the riverbank at this juncture (Victory Gardens) and the hoped for use of the river in even more intensive ways post restoration (canoeing?), this seems to be a very severe health issue.

Notes

Inflation

"…added to the construction cost at a rate of 2.5%…"

a) I would suggest that this be raised, especially with current economic cycles changing. I believe PB recommends this also. My suggestion would be 3% as a minor hedge, 4% as a moderate level and %5 as an outside, and probably unrealistic, limit.

With regard to PB's REVIEW:

Executive Summary

a) I concur with all their additions and recommend they be factored into an adjusted cost analysis. I must say their recent experience with unforeseen sedimentation, unknown geological features and utility (Transit) proximity to a project site vis-à-vis the CAT/Turnpike/Ted Williams Tunnel should be respected as per their comments at the top of page 3!

Other Factors

Construction Packaging

a) I would agree with the three-contract option presented in their matrix of packaging strategies.

Thanks very much for all your time and effort on this wonderful (but costly) project.

Yours sincerely,

George Hagerty
(Via email attachment)

ATTACHMENT 3

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MEMORANDUM

DATE: March 7, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Upcoming Meeting; Other Information

Wednesday, March 14, 2001

Northeastern University
Kerr Hall,
96 The Fenway
Northeastern University Faculty Center

Agenda Topics:
- Discussion of How the CAC will Review and Develop Comments on the Draft EIR
- Scheduling Meetings for the CAC's DEIR Review and Comment Process

Note: *Additional CAC Meetings will be scheduled at this meeting.*

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Enclosures:

1. Memorandum on Goose Control, dated February 27, 2001.

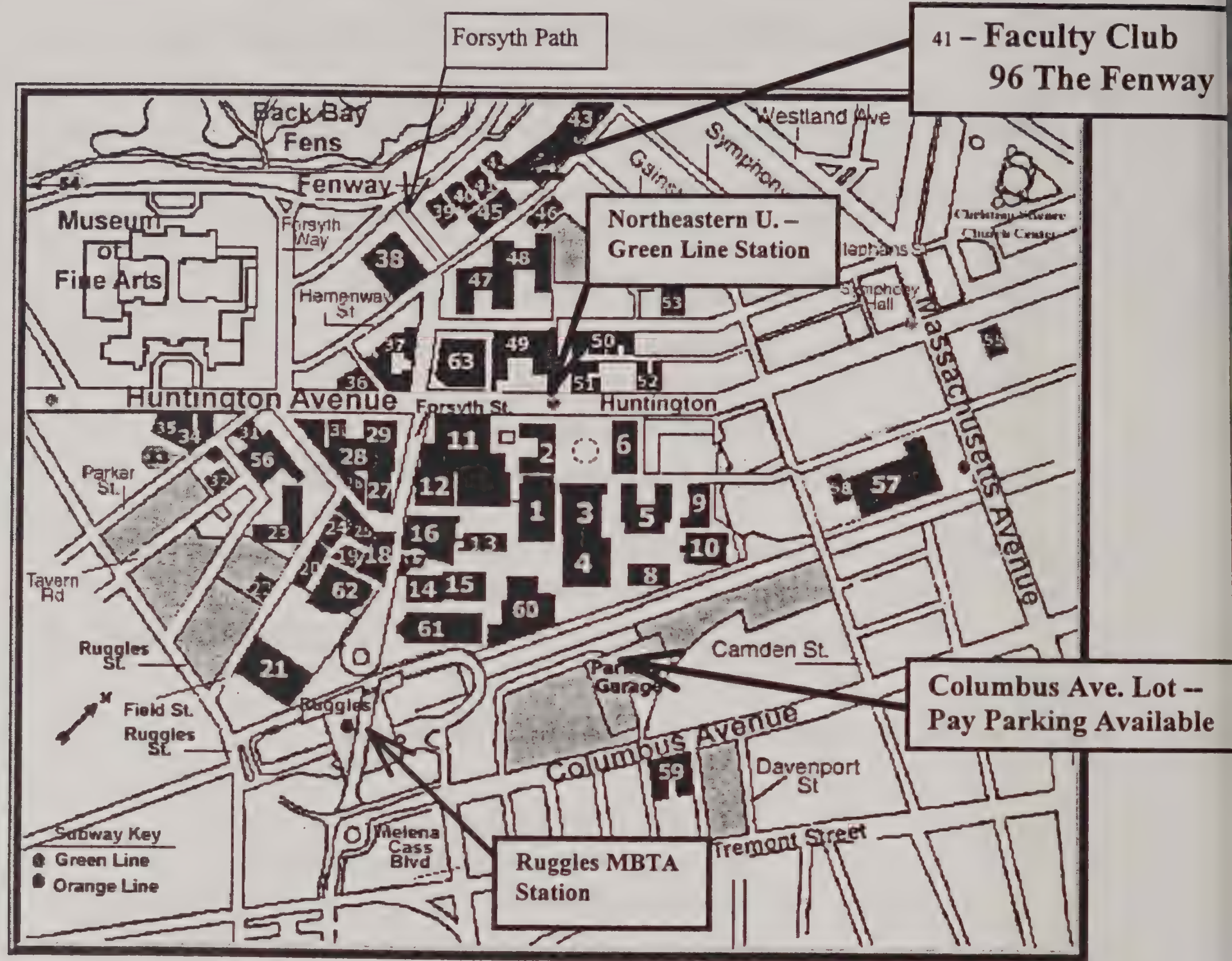
2. Possible Dates for Upcoming CAC Meetings

3. Meeting Summary, CAC Meeting of November 15, 2000.
   Please review the meeting summary. Submit written comments within 7 calendar days John Burckardt by fax (617-635-3256) or e-mail (jburckardt@ci.boston.ma.us) *The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.*

Please see attached notes on the CAC's review of the Draft EIR.

Directions to
Northeastern University Faculty Club
Kerr Hall, 96 The Fenway

NORTHEASTERN UNIVERSITY CAMPUS



Forsyth Path

41 – **Faculty Club**
96 The Fenway

Northeastern U. – Green Line Station

Columbus Ave. Lot -- Pay Parking Available

Ruggles MBTA Station

From The Fenway (walking):
The Faculty Club is at 96 The Fenway, between Westland Avenue and the Museum of Fine Arts.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Right on Forsyth St. and walk to end. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Orange Line:
Exit at Ruggles Station. Use the Forsyth Street exit. Walk 2 blocks, cross Huntington Avenue (traffic light) and continue one more block. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Parking Garage:
Cross the tracks using the concourse through Ruggles MBTA station. Next, follow direction (above) from Ruggles Station to the Faculty Club at 96 The Fenway.

Review of the Draft Environmental Impact Report by the CAC

General:

The CAC's role, as defined in the Secretary's Certificate, is to advise the Secretary in his evaluation of the proponent's proposed means and measures to avoid or minimize and mitigate damage to the environment, while achieving the project's goals of *flood control, water quality improvement, habitat enhancement, historic preservation, and implementation of Best Management Practices (BMPs)*. The CAC's task is to review proposed activities, comment on the feasibility of different approaches and their likely environmental impacts, and assist the proponent in generating and reviewing alternatives which would avoid or minimize damage to the environment.

In the upcoming review of the Draft Environmental Impact Report (DEIR), the CAC will fulfill the role for which it was assembled by drafting a letter to the Secretary of Environmental Affairs commenting on the adequacy of the DEIR.

For an outline of how the CAC will go about its review of the DEIR, please refer to the enclosed meeting summary from November 15, 2000. Item II (starting on the bottom of page 1) includes a summary of the preliminary discussion of the CAC review process that took place at the November 15th meeting.

CAC Review Period:

The CAC will be given a "Pre-Filing" Draft of the EIR prior to the proponent's filing the DEIR with the Secretary of Environmental Affairs. During this 30-day period, the CAC will meet to discuss its collective comments on the DEIR. The CAC will send its comments in a letter to the Secretary of Environmental Affairs.

If the CAC wishes a longer period, the CAC may request that the proponent allow a longer review period (such as 60-days).

After receipt of the CAC's comments, the "Pre-Filing" DEIR will be re-edited to include the CAC's comments and then issued to the Secretary and the public.

Support Available to the CAC:

The project proponents will support the CAC in its review and comment process, including:

- Meeting rooms at Northeastern University;
- A note-taker for each meeting. Comments will be transcribed and distributed to the CAC prior to the following meeting;
- When requested by the CAC, member(s) of the CDM team can be present for questions on the DEIR.
- A laptop computer with projector and screen, so that the CAC's comments can be projected for group review and editing at the meetings; and
- Other general clerical support such as copying of documents, distribution of materials and mailing.

Additional CAC Meetings:

At the March 14th meeting, the CAC will choose dates for additional meetings for the purpose of its review of the DEIR. Please bring your calendars. We anticipate the review period to start in April. If the CAC requests a 60-day review period, this would run into June.

Please note that it may not be possible to schedule meetings such that all CAC members will be available for all review meetings.

The proponents have reserved rooms at Northeastern U. for Mondays and Wednesdays in April through June. A list of these dates is included.

If you cannot attend the March 14th CAC Meeting, please let us know your times when your are available and unavailable. Please e-mail, fax or mail your schedule to John Burckardt c/o Boston Parks & Recreation no later than **March 13th**:

e-mail: jburckardt@ci.boston.ma.us *fax:* *(617) 635-3256*
mail: *1010 Massachusetts Avenue, 3rd floor, Boston, MA 02118*

Emerald Necklace Citizen's Advisory Committee

Faculty Club, Northeastern University
Kerr Hall – 96 The Fenway

Wednesday, March 14, 2001
6:00p.m. - 8:30p.m

DRAFT
03/07/01 9:53 AM

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:20

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

***John Burckardt**, P. E, Project Manager*

II. **Project Update** 6:20 – 6:30

***Bruce R. Conklin, P. E.**, Vice President*
Camp Dresser & McKee Inc.

III. **Discussion of How the CAC will Review and Develop Comments on the Draft EIR** 6:30 - 7:50

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

IV. **Scheduling Meetings for the CAC's DEIR Review and Comment Process** 7:50 - 8:20

V. **Questions and Answers (General Public) Wrap Up** 8:20 – 8:30

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – March 14, 2001 CAC Meeting

Faculty Club, Northeastern University Kerr Hall – 96 The Fenway

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator
Jane Wells, MA Office of Dispute Resolution

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II Project Update

Bruce R. Conklin, P.E., Vice President
Camp Dresser & McKee Inc.

III Discussion of CAC DEIR Review and Comments Process

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

IV Questions and Answers (General Public) Wrap Up

Summary

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian opened the meeting and reviewed the agenda. Susan welcomed Ed Burke as the new CAC member substituted for Irene Gillis on behalf of Restore Olmsted's Waterways, and Kathy Baskin as a potential substitute for Mary Crain Penniman on behalf of Charles River Watershed Association.

John Burckardt reported that CAC members Hugh Mattison and Isabella Callanan had provided comments since the February 14, 2000 meeting. Hugh's comments on goose control and maintenance were distributed to the CAC. John Burckardt noted that these comments can be discussed in greater detail during the upcoming meeting dedicated to the CAC's review of the Draft Environmental Impact Report (DEIR). John Burckardt noted that Isabella Callanan's comments were regarding upcoming Brookline town board meeting regarding two properties adjacent to the park near Route 9. See Isabella for additional information.

II Project Update

Bruce Conklin noted that the CDM team has been finalizing the DEIR. The CAC will receive their review copies of the DEIR on April 23, 2001.

III Discussion of CAC DEIR Review and Comments Process

To facilitate the discussion, a handout (see Attachment 2) with possible approaches and meeting formats was distributed:

- The CAC was presented with timing/scheduling scenarios for reviewing the DEIR. There will be two CAC review processes:
    1) Review of the "pre-filing DEIR" (during spring 2001) and
    2) Review of the "filing DEIR" (during summer 2001) -- this is the draft which will incorporate CAC comments from the first review process and be filed with the Secretary of Environmental Affairs.
- The CAC was presented with two approaches to review the DEIR, the "MEPA approach" and the "Major Topics approach".
- The "MEPA Approach" was a review of the entire document, basically in the order presented in the DEIR.
- The "Major Topics" approach would allow the CAC to prioritize review topics that the CAC may feel needed more time and effort versus other baseline topics.

Conclusions of the meeting include:

- The CAC would utilize a revised "Major Topics" approach with topics in the following order presented at upcoming CAC meetings.

  Vision Statement/Executive Summary
  Project Alternatives
  Project Design/Preferred Alternative
  Project Impacts and Mitigation
  Best Management Practices (BMPs)
  Maintenance and Management
  Funding
  Miscellaneous/ ENF Comments
  Revisit Vision Statement
  (Open date, if needed)

- The CAC is encouraged to write pre-meeting memos with their comments on topics in the DEIR. This is especially true for members who cannot make the meeting when the topic will be discussed. These memos should be sent to John Burckardt[1], who will distribute them to the entire CAC prior to the meeting at which the topic will be discussed.
- Brief presentations (15 minutes or less) by CAC members may be made before topic discussion. The laptop computer will be available if CAC members wish to use PowerPoint for their presentation.

---

[1] Send comments to John Burckardt by mail, fax or e-mail:

John F. Burckardt, PE
c/o Boston Parks & Recreation Department
1010 Massachusetts Avenue, 3rd Floor
Boston, MA 02118

fax: 617 635-3256
e-mail: jburckardt@ci.boston.ma.us

- A standard set of 4-6 questions/checklist will be developed in order to evaluate each topic with baseline questions. Laura Rome of MEPA suggested that the CAC might find reference to the Secretary's ENF helpful in developing these questions. *CAC members are encouraged to send suggested questions to John Burckardt prior to the next CAC meeting on Monday, April 23, 2001*.
- Notes will be taken at each meeting in "real-time" manner on a laptop computer and projected on a screen for the CAC to see. (The note-taker provided by the proponents, Felipe Schwarz, was present at the meeting to test out this note-taking system.) At the end of each meeting, the notes will then be given to 2 to 3 CAC members who will write, in more detail, a draft of the CAC's comments on the topic discussed at the meeting. These draft comments will then be submitted within two weeks to the entire CAC. The entire CAC will then review and comment on the draft.
- A "parking lot" will be created for issues to cover in later meetings as we go through each meeting.
- *CAC members will be asked at the next CAC meeting on April 23rd to sign up for topics of the DEIR on which they are willing to write draft comments*, summarizing the CAC's comments from the review meetings; and a few CAC members will be asked to sign up for compiling all comments into the CAC's comment letter.
- Everyone on CAC is encourages to be active in all discussions.
- The CAC agreed to keep June 30th deadline with 9 to 10 weekly meetings beginning Monday, April 23, 2001.
- Monday June 25th will be reserved for a 10th meeting time, if needed.
- The CAC agreed to the following meeting schedule:

CAC MEETING SCHEDULE				
1	Mon.	23-Apr-2001	*Vision Statement/Executive Summary*	450 Dodge Hall, NU
2	Wed.	02-May-2001	*Project Alternatives*	440 Egan Center, NU
3	Mon.	07-May-2001	*Project Design/Preferred Alternative*	440 Egan Center, NU
4	Wed.	16-May-2001	*Project Impacts and Mitigation*	440 Egan Center, NU
5	Mon.	21-May-2001	*Best Management Practices*	450 Dodge Hall, NU
6	Wed.	30-May-2001	*Maintenance and Management*	96 The Fenway, NU Faculty Lounge
7	Mon.	04-Jun-2001	*Funding*	450 Dodge Hall, NU
8	Wed.	13-Jun-2001	*Miscellaneous / ENF Comments*	96 The Fenway, NU Faculty Lounge
9	Wed.	20-Jun-2001	*Vision Statement – Revisit*	440 Egan Center, NU
10	Mon.	25-Jun-2001	*Open*	TBD

- Susan Jeghelian, assisted by Jane Wells, will provide facilitation services for the CAC Review Meetings.
- Project consultants will not attend every CAC Review Meeting, but rather CAC members will request the attendance of the project consultants as needed. The CAC may request that

the consultants make specific presentations on 'Management and Maintenance' and on 'Funding' when these topics are addressed.

Other comments raised during discussion included:

A CAC member asked what was the proponents' goal in filing the DEIR?
The proponents' goal is to file the DEIR with MEPA in mid summer 2001. MEPA Certificate is anticipated in the fall.

Some CAC members made a request that the CAC receive the vision statement and executive summary discussion prior to the April 23rd meeting.

A CAC member asked how the DEIR review relates to the environmental review under the National Environmental Protection Act (NEPA) that the US Army Corps of Engineers (ACOE) will be involved in. Will the ACOE use the EIR for its EA? The Corp's document needs to be consistent with the EIR.
The ACOE's current schedule will not allow them to use the DEIR for its EA under NEPA. The ACOE is working on its Decision Document and preparing a scope of this document for Washington Corps staff review. The EA would follow the Decision Document. However, the proponents and CDM are supplying ACOE with all data assembled for the EIR so that they can use it for their EA.

A CAC member commented that funding should be on the Major Topics list. Can a description of the funding possibilities be provided?
Section 10 of the DEIR will contain a funding strategy.

A CAC member proposed that the first review meeting should be the CAC's meeting to review and discuss the project vision and executive summary. There would be no need for the consultants to attend.

IV Questions and Answers (General Public) Wrap Up

There were no additional questions or comments provided.

Meeting Schedule

The next meeting of the CAC is scheduled for Monday, April 23, 2001 at 6:00 PM. This will be the first session on the review of the DEIR. It will focus on the project vision statement and the executive summary. The meeting will be in Room 450 of Dodge Hall, Northeastern University.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – Organization of DEIR Review (Handout at CAC meeting)

Attachment 1

Emerald Necklace Citizens Advisory Committee
Meeting
March 14, 2001

Sign-In Sheet

Name		Affiliation	Signature
Charles Alan	Birnbaum	National Park Service	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	Ed Cutler (Hm)
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney, Hawkes ~~& Goldings~~	Frances Allen Gershwin
Irene	Gillis	Restore Olmsted's Waterway Coalition	[illegible] J. Burke
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	Gary R Hilderbrand
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Emerald Necklace Citizens Advisory Committee
Meeting
March 14, 2001

Sign-In Sh

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
John A.	Martin	Emerald Necklace Conservancy	
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		
Paul	Mentag	Fenway Alliance	
Kathy ~~Mary Crain~~	Baskin ~~Penniman~~	Charles River Watershed Association	Kathy Baskin
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen T. Woodford

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

March 14, 2001

\\parksmail\bospark\Muddy\CAC Meetings\CAC-16 Mar 14 2001\[CAC Sign-in Mar-14-2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Jane Wells	MODR	617-727-2224 ext. 21192	

Page 3 of 4

Emerald Necklace Citizens Advisory Committee

Meeting

March 14, 2001

Sign-In Sheet

\\parksmail\bospark\Muddy\CAC Meetings\CAC-18 Mar 14 2001\[CAC Sign-in Mar-14-2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Betsy Shure Gross	EOEA		
Laura Rome	EOEA/MEPA		
David Mendelsohn	EOEA/DEM		
Anne Covert	neighbor		
Clair Flury	garden Soc	617-266 1169	95 Park DR.
Carl Noyes	Costell	781890 3737x678	Costell Costell.com
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Marion Pressley	Pressley Assoc.	617 491-5300	
TOM BRADY	TOWN OF BROOKLINE CONSERVATION ADMINISTRATOR	617 730-2088	TOM_Brady@town.brookline.
Bob McDonnell	NU.	617-373-5330	r.mcDonnell@NEU.EDU
Fran Beatty	Bos Parks	635-4505	beatty@ci.boston us
John Burckhardt	PB c/o Boston Parks	635-4505	jburckardt@ci. boston.ma.us

Attachment #2

DRAFT

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

Review of "Pre-Filing" Draft Environmental Impact Report

Possible Organization of DEIR Review
"MEPA" Approach

This approach starts with existing conditions and builds upon that, according to the way MEPA envisions an EIR being produced:

1.	Existing Conditions	*See Section 4,* *Appendices B, C, D, E, F, G, H*
2.	Project Objectives/Statement of Problem	*See Section 1*
3.	Alternatives Analyses	*See Section 2*
4.	Definition of Preferred Alternative (Project Description)	*See Section 5,* *Appendix I*
5.	Project Impacts	*See Section 6* *Also refer to Section 9*
6.	Mitigation Measures	*See Section 7*
7.	Maintenance and Monitoring (including BMPs and Management & Maintenance Plan)	*See Section 8* *Also refer to Section 3*
8.	Funding Strategy	*See Section 10*
9.	Other:	
	- Project Overview	*See Executive Summary & Section 1*
	- Emerald Necklace Master Plan	*See Appendix A*
	- Public/Agency Involvement	*See Sections 3 & 9; Appendices K & L*
	- ENF comments & responses	*See Appendix J*

DRAFT

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

Review of "Pre-Filing" Draft Environmental Impact Report

Possible Organization of DEIR Review
"Major Topics" Approach

This approach focuses on the major topics or issues of concern to the CAC. Following is a possible list of major topics:

1.	Maintenance and Management	*See Section 8* *Also refer to Section 3*
2.	Project vision statement/ Executive Summary	*See Executive Summary & Section 1*
3.	BMPs	*See Section 2.5 and 5.7*
4.	Project Alternatives	*See Section 2*
5.	Project Design/ Preferred Alternative	*See Section 5 & Appendix I*
6.	Project Impacts & Mitigation	*See Sections 6 & &* *Also, see Section 9*
7.	__________________	
8.	____________________	

DRAFT

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE
Review of "Pre-Filing" Draft Environmental Impact Report

Possible Organization of DEIR Review

Suggested Meeting Agenda

1. *Summary of Comments Made at Last Meeting* [15 min.]

2. *Review/Finalize Written Comments on Previous Topic* [30 min.]

3. *Discuss Comments on Current Topic* [90 min.]

4. *Review Comments Made at This Meeting* [15 min.]

Suggested Meeting Organization

Meeting	Finalize Comments on Topic No.	Discuss Topic No.	Comment Letter
April meeting		Topic #1	
Review meeting #1		Topic #2	
Review meeting #2	Topic #1	Topic #3	
Review meeting #3	Topic #2	Topic #4	
Review meeting #4	Topic #3	Topic #5	
Review meeting #5	Topic #4	Topic #6	
Review meeting #6	Topic #5	Topic #7	
Review meeting #7	Topic #6	Topic #8	Present partial draft
Review meeting #8	Topic #7 & #8		Review draft
Review meeting #9			Finalize comment letter

MEMORANDUM

DATE: April 12, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

PLEASE NOTE MEETING LOCATION!

Monday, April 23, 2001
Northeastern University
Dodge Hall, Room 450 (4th floor)
Huntington Avenue (off the main quadrangle, next to the YMCA and the Green Line Station)

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topic: Draft Environmental Impact Report (DEIR) Review #1:
Executive Summary & Vision Statement

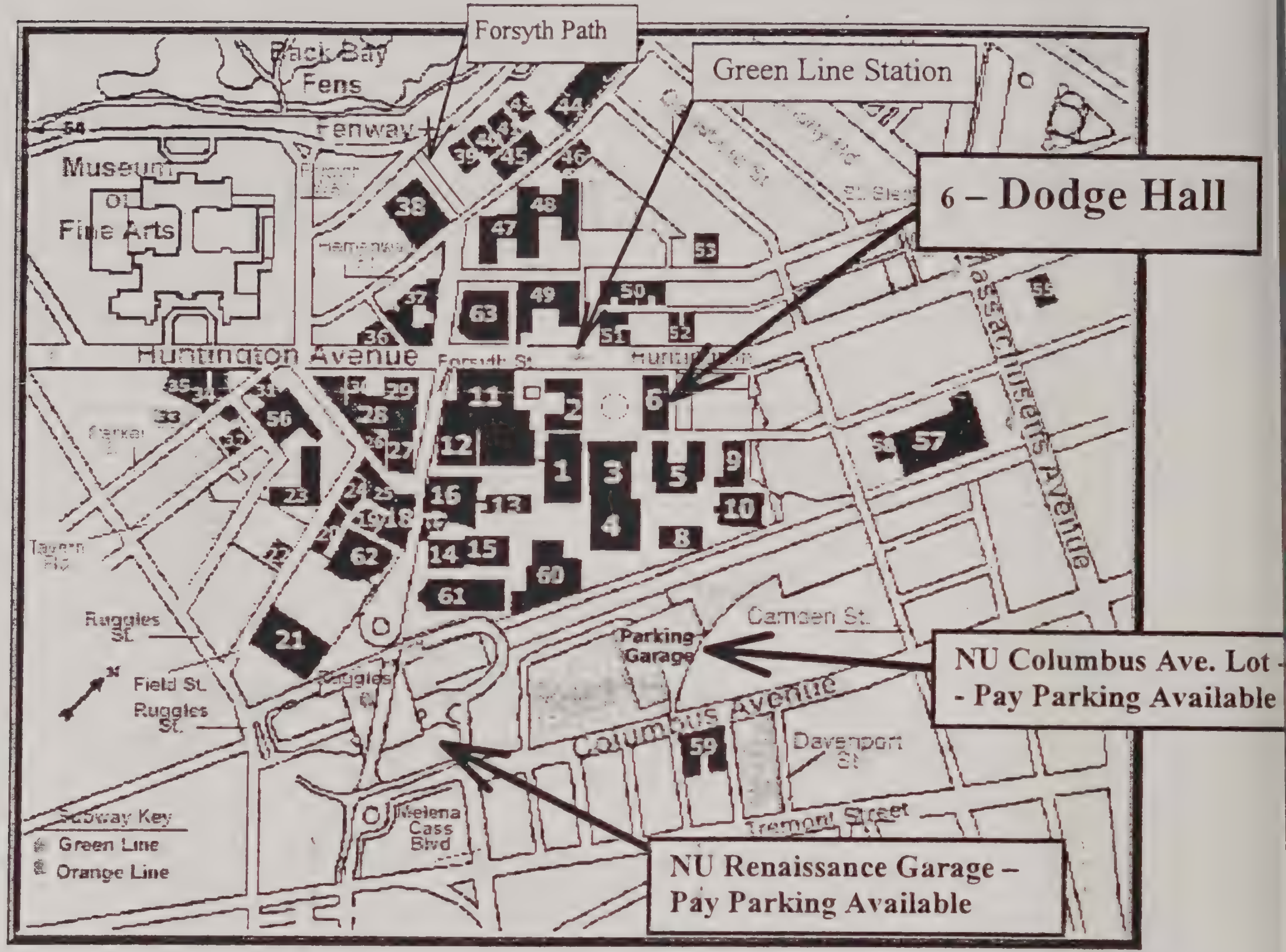
5:45 p.m. Refreshments
6:00 p.m. Discussion
8:30 p.m. Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to

Dodge Hall -- Room 450

NORTHEASTERN UNIVERSITY CAMPUS



From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to Huntington Avenue. Turn left on Huntington. Dodge Hall is on the main quad near the Green Line stop.

From Green Line (E Train):
Get off at Northeastern U. stop and walk across Huntington Avenue to the main quad. Dodge Hall is the building on the left as you enter the main quad.

From the Orange Line:
Exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

From the Parking Garages:
Columbus Ave. Garage: Cross the tracks on the footbridge and continue walking to the main quadrangle. Dodge Hall is to your right.
Renaissance Garage: walk through Ruggles MBTA Station and exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

Emerald Necklace Citizen's Advisory Committee

Northeastern University
Dodge Hall – Room 450

Wednesday, April 23, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:15

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

***John Burckardt**, P. E, Project Manager*

II. Review of Plan for DEIR Review Meetings 6:15 – 7:15

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

III. Discussion of Vision Statement and Executive Summary 7:15 – 8:20

***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*

IV. Questions and Answers (General Public) Wrap Up 8:20 – 8:30

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EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE
Review of Draft Environmental Impact Report

	Day	**Date**	**Topic for Discussion**	**Review of Draft Comments**	**Location**
1	Mon.	23-Apr-2001	*Vision Statement/Executive Summary*	(none)	450 Dodge Hall, NU
2	Wed.	02-May-2001	*Project Alternatives*	(none)	440 Egan Center, NU
3	Mon.	07-May-2001	*Project Description/Preferred Alternative*	*Vision Statement/Executive Summary*	440 Egan Center, NU
4	Wed.	16-May-2001	*Project Impacts and Mitigation*	*Project Alternatives*	440 Egan Center, NU
5	Mon.	21-May-2001	*Best Management Practices*	*Project Description/Preferred Alternative*	450 Dodge Hall, NU
6	Wed.	30-May-2001	*Management and Maintenance Plan*	*Project Impacts and Mitigation*	96 The Fenway, NU Faculty Lounge
7	Mon.	04-Jun-2001	*Funding*	*Best Management Practices*	450 Dodge Hall, NU
8	Wed.	13-Jun-2001	*Miscellaneous*	*Management and Maintenance Plan*	96 The Fenway, NU Faculty Lounge
9	Wed.	20-Jun-2001	*Vision Statement – Revisit*	*Funding*	440 Egan Center, NU
10	Mon.	25-Jun-2001	(none)	*Miscellaneous /Vision Statement / Finalize Comment Letter*	450 Dodge Hall, NU

CAC Review of Draft Environmental Impact Report

General Questions:

- Does the DEIR meet the prescriptions set forth in the Secretary's Certificate?
- Does the DEIR describe the project in a manner consistent with how the project was described at the CAC presentations?
- Does the DEIR incorporate the comments made by the CAC at the CAC meetings?
- Is there a more cost-effective way of accomplishing an element of the project, while still meeting the stated project objectives?

Specific Questions Based on the Certificate of the Secretary of Environmental Affairs on the ENF (dated 4/29/99).

Instructions:

1. For each topic in column (1), put a Yes or No in columns 2 and 3.
2. In the event of a response of No in column 3, CAC members should articulate reasons why the topic is not adequately addressed and include in the meeting notes. Put a Yes in column (4).
3. In some cases where there is a Yes in column (3), the CAC may wish to include comments. If so, put a check in column (4) and CAC member(s) should articulate the comments, which will be included in the meeting notes.

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Comments Noted
Alternatives			
The EIR should expand on the alternatives analysis included in the ENF			
The EIR should analyze the no-action alternative to establish baseline conditions			
Project Permitting			
The EIR should include a brief discussion of each state permit or agency action required for the proposed project.			
The EIR should discuss how the project will meet the requirements and performance standards of each state permit.			

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Comments Noted
Flood Control			
The EIR should identify specifically which proposed actions are intended to prevent or minimize flooding.			
The EIR should describe the potential impacts of flood control activities and impacts that have been considered that would avoid or minimize damage from flood control activities.			
The EIR should quantify additional flood water storage capacity to be gained by each area of proposed dredging and identify the locations of additional storage capacity areas.			
Where the project proposes clearing or expanding culverts, the EIR should specify the activities to be undertaken and the benefits projected to be gained.			
The EIR should include the sequence in which flood control projects will be implemented and should describe the criteria used to assign priority to flood control projects.			
Stormwater/Water Quality Improvements			
The EIR should describe in detail the specific measures that will be undertaken to improve water quality, indicate the sequence in which they will be implemented and relate that sequence to the schedule for dredging.			
The EIR should describe potential impacts that may result from implementation of any stormwater or water quality improvements.			
The EIR should include a comprehensive maintenance management plan to ensure continuing effectiveness of any stormwater or water quality improvement measures and prevent new siltation, and identify funding sources for ongoing long-term implementation of the maintenance plan.			
Wetlands Impacts/Variance Requirements			
The EIR should identify all wetland resource areas, including riverfront area and buffer zones, and delineate them on a reasonably scaled plan.			
The EIR should identify the significance of the resources, including value to flood control, storm damage prevention, pollution prevention, and fisheries and wildlife habitat.			

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Comments Noted
The EIR should quantify in appropriate units the project's estimated impact on each resource area.			
The EIR should provide information requested in DEP's comment letter regarding the project purpose(s) to be served by each instance of wetland alteration.			
Dredging			
The EIR should describe the potential impacts of the proposed dredging and indicate the location of each area proposed to be dredged.			
The EIR should describe the purpose(s) of each area of dredging and alternatives to dredging.			
The EIR should compare the benefits of bank-to-bank, channel and spot dredging in terms of the goals of the proposed project.			
The EIR should analyze a range of dredging techniques, describe the circumstances under which each would be the preferred alternative and indicate the criteria used to select dredging techniques for the project's various dredging areas.			
The EIR should clarify the purpose of any proposed overdredging and describe how the project will avoid damage to the clay liner during overdredging.			
Dredged Material Management and Disposal			
The EIR should describe in detail how the proponent will manage dredged material.			
The EIR should analyze various locations for storage and dewatering in terms of technical suitability and the impacts on traffic, residents and historic impacts.			
The EIR should describe the proponent's plans for identifying and managing contaminated sediments, including proposed testing and on-site treatment and techniques for segregating contaminated sediments.			
The EIR should identify landfills that may be able and willing to accept dredged materials from the project.			
The EIR should include appropriate out-of-state landfills.			

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Comments Noted
Phragmites Control			
The EIR should describe the methodology and results of the demonstration project and indicate how those results will inform the alternatives analysis for Phragmites control in this project.			
The EIR should describe the purpose and potential impacts of any proposed Phragmites control activities.			
The EIR should describe alternatives considered, explain why any alternatives are no longer under consideration and provide information related to the projected effectiveness of the preferred alternative.			
The EIR should also describe the maintenance plan to be implemented to ensure that the Phragmites does not return, including identifying funding sources for implementing the maintenance plan.			
Habitat Improvement and Rare Species			
The EIR should identify which activities are intended to improve wildlife habitat and document what improvements will result from these activities, what impacts are likely to result from those activities and what alternatives have been considered that may avoid or minimize impacts from these activities.			
The EIR should describe steps that the project will take to avoid impacts to rare species.			
Historic Resources and Landscape Restoration			
The EIR should describe the landscape restoration project in greater detail, including the proposed sequence of restoration projects and plans that demonstrate at least a conceptual level development.			
The EIR should identify any impacts on historic resources that may result from the implementation of this project, as well as any alternatives that have been considered that may avoid or minimize damage to historic resources.			

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Comments Noted
Circulation Improvements			
The EIR should describe the proposed sequence of circulation improvement projects and plans that demonstrate at least a conceptual level development and include proposed stormwater management improvements in roadways and pathways.			
The EIR should describe potential impacts on the environment of the proposed circulation improvements, alternatives that have been considered and the sequence in which the improvements are proposed to be undertaken.			
Charlesgate			
The EIR should detail the proposed activities in the Charlesgate area, their likely impacts on the environment, alternatives that have been considered, and include an analysis of the alternatives, a schedule and proposed mitigation measures.			
The EIR should include a construction mitigation plan, particularly regarding potential traffic impacts.			
The EIR should include site plans at an appropriate scale showing the boundaries of the proposed project area, as well as wetland resource areas and their buffer zones.			
The EIR should include all information that the proponent will be required to provide to the Federal Emergency Management Agency.			
The EIR should contain a proposed Section 61 Finding relative to this phase.			
Construction Impacts			
The EIR should describe impacts likely to result from project construction and steps that will be taken to avoid or minimize construction impacts.			
The EIR should describe the measures that the proponent will take to protect historically and environmentally significant landscape features and vegetation.			
The EIR should describe potential impacts on traffic and recreational use of the parks, especially during dredging, and the steps that will be taken to avoid or minimize these impacts wherever feasible.			

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Comments Noted
The EIR should describe steps that the proponent will take to minimize the project's adverse impacts on air quality, including ensuring the use of retrofitted construction equipment.			
Maintenance and Monitoring			
The EIR should describe in detail the proponent's maintenance management plan for maintaining the restored condition of the Muddy River and the Emerald Necklace parks.			
The EIR should describe ongoing measures to prevent the recurrence of invasive vegetation that has been removed.			
The EIR should include commitments to maintain the restored historic landscape and structures.			
The EIR should include protocols for regular monitoring of environmental conditions to provide a continuous feed-back loop by which the effectiveness of management practices can be measured.			
The EIR should define the proportional financial responsibilities of the City of Boston and the Town of Brookline for all short-term and long-term maintenance and monitoring measures related to the project.			
Mitigation			
The EIR should include a summary and appropriate commitments for each project impact within the MEPA jurisdiction described in the EIR.			

E-Mail Message

From: Edward Cutler [ebcutler@earthlink.net]
Sent: Sunday, April 22, 2001 7:37 PM
To: jburckardt@ci.boston.ma.us
Cc: Anne Covert
Subject: Comments on Exec. Summ.

Dredging will affect the resident benthic resources the most, John,

Below are some comments after reading the first segment. I'm not sure what the plan is for tonight's meeting but thought you could decide best whether to copy this or just have it 'in hand' so when the time came you might assist me in raising these points??

Thanks,
ED
******

Notes from Ed Cutler on Exec. Summ. (See **)
Some of these should be fixed Now & others SHOULD be addressed in later chapter, maybe? Some response would be welcome.

Plan page 5, line 3:

The Emerald Necklace Master Plan (April **2001) is a comprehensive plan for the long *IS THIS REALLY THE DATE YOU ANT TO USE? NOT 198X ?

*** p. 22 / l. 34

species of crustaceans, snails and other species. The Corps of Engineers sampled sediments in the Riverway and identified 12** types of invertebrates dominated by pollutant tolerant ** worms. The benthic community serves as a food source for such **TYPES? PERHAPS FAMILIES OR ORDES? TYPES HAS NO MEANING HERE. & what Kind of worms - even at Phylum level could be stated?

*** P. 31 / L. 28

Dredging will affect the resident benthic resources the most. There will be a near total loss of these species, which are presently dominated by pollution-tolerant organisms. There is expected to be some remaining benthic species that will act as seed for re-growth. It is expected however that the new community will be less dominated by pollution-tolerant organisms.

**RE-SEED OPTIONS - OTHER THAN CHANCE?

***** P.31 / L.32

Dredging will kill some fish. The fish loss may be proportionally higher in the bottom dwelling species than the open water species. The Muddy River would actually benefit from substantially fewer bottom dwelling species.
**EXPLAIN?

*** P. 32 / L. 20

Wildlife Community

In locations where dredging occurs during winter hibernation, amphibian and reptiles will not be able to relocate and will be lost **SCHEDULE OPTIONS TO MINIMIZE THIS? E.G. LESS 'WILD' AREAS IN WINTER.

*** P.34 / L.29

specified truck routes and limit impact of the **SP.contraction traffic on the   (CONSTRUCTION)

*** P. 39 / L. 17 - 18

Monitoring of Fish and Wildlife Distribution and Reproduction

A biologist will is recommended to visit the Muddy River every other year to document fish and wildlife communities in the early and late growing season. While not an intensive documentation, this program is **STRONGLY recommended to indicate trends in habitat usage.   **INCLUDE BENTHIC INVERTS HERE

GEORGE HAGERTY
FENWAY STUDIOS
No. 402
30 IPSWICH STREET, BOSTON, MA 02215
Studio: 617-247-3508/Home: 781-344-9564/Fax: 781-341-8808

Mr. John Burckardt
Project Manager
Muddy River Restoration Project
Boston Parks Department
1010 Massachusetts Avenue
Boston, MA 02118

April 19, 2001

Dear John:

Enclosed are my comments on the "Executive Summary, DEIR" provided to members of the Citizens Advisory Committee (CAC) by Camp Dresser & McKee Inc. (CDM), in preparation for the April 23rd CAC meeting.

I will note page, paragraphs and headings from the document for your reference. Italics herein will represent my editorial additions. I'm not a proofreader by profession and understand that some of my edits may be subjective or inaccurate. I must also apologize for not being able to attend the upcoming meeting, as a conflict in my schedule has arisen. I will try and call you sometime later in the week for a summary of the discussion that I hope will be lively and productive.

Firstly, I must say I was a bit disappointed in the executive summary as a whole, because it does not I think, do justice to the tremendous amount of effort, thought and discussion that went into its findings. Understanding that these will be borne out ad infinitum by the preponderance of the draft itself, it did not seem to flow and build to the kinds of logical, methodical and seemingly inevitable conclusions that Bruce so aptly presented to us on many an occasion. For me it had more the sense of note taking and selective quoting rather than a smart, effective and worthy synthesis of the project and consultant's findings. As we are all faced with the daunting task of funding in part or whole, either now or in the future, this enormously important and beneficial project, I worry that this executive summary does not advocate strongly enough for the results we all hope for. I have no particular offer of stylistic approach or tenor with which to burnish or improve the document, only a feeling that it may not serve us as well as it might.

The following comments may seem needlessly picayune, but I offer them none the less in a small effort to improve the summary's readability. As you know, I share some of Richard Heath's concerns about management of the project going forward. Rather than dig into that topic here, I will await the full report and digest its prescriptions for dealing with overlapping jurisdictions, BMPs, annual reports et al., before commenting on that particular subject in depth.

Specific comments:

ES-3, 4th P, Project Objectives
"The project's objectives focus on achieving the vision."

> The vision of what? There is no subject to the sentence. This is an incomplete and confusing way to begin a subject heading and topic.

ES-5, 3rd P, Project Schedule for Phase 1 Charlesgate
"Generally, implementation…of the Final Environmental Impact Report.'

> Should follow with (EIR), as this is the first mention of Final Environmental Impact Report.

ES-6, 5th P, Improve Flood Control
"From the Riverway at the Former Sears parking lot to Brookline Avenue, twin 72 inch underground pipelines are insufficient to carry flood flows."

> I would add, "…*deemed* or *were determined to be* insufficient…" to show that this is one of the conclusions of this report and the consultants modeling. It would add more force (all though I think it has been assumed for sometime!).

"This will reduce roadway flooding and bring the flood elevation below the entrance to the subway tunnels."

> I would add "…below the *nearby* entrance to the *MBTA Green Line* tunnels." The sentence is vague without these factual details.

ES-7, 2and P, Dredge Charlesgate area only
"…Ipswich Street bridge flood conditions would improve, but only *by* about 1 foot at the upstream end of Charlesgate."

ES-8, 1st P, Infrastructure
"…The Riverway, a new culvert (10' by 24') for Brookline Avenue and *by* rehabilitating the existing…" or "…for Brookline Avenue *and a rehabilitation* of the existing…"

ES-8, 2and P, Dredging
"sediment slurry to a mechanical dewatering device, such as a belt filter, located in an onshore…" Commas around parenthetical mention of filter.

"…requires extra steps such as air drying and mechanical dewatering to dry the sediment prior to transport."

> This paragraph does not end with a conclusion which helps lead to the chosen method of Hydraulic dredging following. Suggest adding the following sentence, or some such conclusion, that describes the *extra steps* and their negative impacts. *"These extra steps would increase impacts to the park and staging areas that have been found to be unacceptable or difficult to mitigate."*

ES-8, 3rd P, Dredging
"Hydraulic dredging *was selected as* the best method for this project because it has the least impact on the park."

Es-10, 2and P, Dredge Disposal Options
"Disposal options are governed by various *federal, state and local* regulations.

3rd P, Improve Water Quality
The second and third sentence's order should be reversed, starting with "…1980's…" And building in sequence to the "…1990's…" This will lead better into the 1999 Stormwater Permit sentence following.

ES-11, 4th P, Enhance Aquatic and Riparian Habitat
"…as well as anadramous fish and *improve overall* water quality." Switch word order. I would also add "…shorelines and *the* Babbling Brook…"

ES-12, 2and P
"A variety of BMPs *have* been implemented in the watershed in the past thirty years that *have* reduced the amount of sediment…" Past tense agreement.

ES-13, 3rd P, Public/Agency Involvement
"The success of the project depends *upon* open communication and active involvement..."

ES-12, 3rd P, Aquatic and Wildlife Resources
"…. Vegetation Assessment showed that 14 fish species *are* present in the Muddy…"

Es-23, Historic Resources
The first mention of Shurtleff is in the first paragraph of this heading, yet it is not until the second paragraph that we get his full name, e.g. Arthur A. Shurtleff. This should be switched.
Also, the last sentence mentions changes in 1926 and 1940, but does not date the World War II Memorial. Add the date of this addition.

ES-25, 1st P
"There *are* minimal historic resources or integrity *from* either the First or Second Periods…"
"…pathways will be replacement in kind, consistent with Emerald Necklace *Master plan* specifications."

ES-29, 5th bullet
"Beginning in early 2002, the project proponents and the MDC should jointly develop a public education program addressing the issues *around the public's* role in litter control, cleaning up after…"

ES-29$6^{th}$ bullet
"The plan should combine *regulatory actions and public education*." Extra "and" after regulatory.

ES-32, 2and P, Wildlife Community
"The upland wild life…" Should read "wildlife"

ES-33, 4thP, Noise
"…a combination of day and nighttime work, *due to* the difficult traffic…"

Finally, I think the conclusion needs to be greatly strengthened. Do we really want to spend almost one hundred million dollars for that paragraph? Might it not make sense to discuss what may happen if we don't! I think we need a much stronger closing – after all, that may be all a congressperson reads and if they aren't sold by then, the details of the following behemoth won't succeed in generating the kind of appropriations hinted at in the preceding paragraphs. I think this might be an excellent place for some of the CAC members' passion for this project and their years of commitment!

As always and
Respectfully submitted,

George Hagerty

(Via email attachment)

P.S. Please say hello to Fran for me and *thank her* again for attending the lunch meeting at the Museum of Fine Arts with regard to the Charlesgate parcels.

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – April 23, 2001 CAC Meeting

Northeastern University Dodge Hall, Room 450

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator
Jane Wells, MA Office of Dispute Resolution, Co-Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II Process Issues/Organization – Review of Plan for DEIR Review Meetings

III Discussion of Vision Statement / Executive Summary

IV Questions and Answers (General Public) & Wrap Up

Summary

II Process Issues/Organization

1. Plan for Review Pre-filing Draft of EIR

Susan briefly summarized the plan for reviewing the DEIR which was developed by the CAC at the March 14th Meeting:

- The CAC will review the pre-filing DEIR over 10 weekly meetings starting in April and running through June, and will develop comments reflecting a consensus of the CAC.
- The proponents will incorporate CAC comments into "filing DEIR" to be provided to the CAC for its review later in summer.
- The CAC has agreed upon a list of topics for each meeting (see meeting schedule).
- CAC members may to write pre-meeting memos and/or make brief presentations for meeting topics.
- Notes of CAC comments developed at meetings will be taken on lap-top computer by Felipe Schwarz (FPA), who will put them in the form of a meeting summary and provide them to the writers designated for that topic as well as all CAC members.
- Designated CAC writers will write up comment notes for review by the group at the CAC meeting in two weeks; meetings will be in 2 parts: comment review section and new topic section.
- A parking lot will be created for issues to cover at later meetings.
- The CAC will use a checklist of questions for reviewing each topic.

- Susan & Jane will facilitate CAC meetings (plan for another staff to assist also)
- The consultants will not attend every meeting, but will be available upon CAC's request; the proponents will be in attendance.
- The CAC may request presentations on Management & Maintenance and on Funding later when those topics come up at meetings.

2. Designation of CAC Writers

Susan asked for CAC members to volunteer to write comments: 2-3 writers for each topic (who need to commit to attending both meetings on that topic) and 2-3 writers for the final comment letter which will pull all the separate topic comments together. The individuals noted on the attached CAC Meeting Schedule volunteered to be writers. Those with question marks next to their names were not present at the meeting but were nominated as writers by their colleagues. Susan will contact these individuals and ask them if they would agree to serve as writers.

It was agreed that the writers will have two weeks to take the comment notes from the group meeting and create a more formal comment document (full sentences etc.) for the group's review. Because of the tight turn around time, the CAC agreed that the writers could bring copies of their draft comments to the meetings at which they are scheduled to be reviewed as opposed to providing these drafts to CAC members in advance of the meeting. However, should the writers finish early, John Burckardt have offered to facilitate distribution of draft comments to the CAC prior to the meetings.

Susan mentioned that she has asked Felipe to include in his notes and meeting summary any adjustments to the meeting/review process plan agreed upon by CAC (in addition to comments on featured topic).

3. Development of Questions to Guide Review of Topics

A draft checklist for CAC Review of DEIR was handed out at the meeting. The document developed by the Proponents in response to the CAC's indicating that a list of standard questions to guide their review of the DEIR topics would be useful. John Burckardt and Fran Beatty explained that the checklist was based on the Certificate of the Secretary of Environmental Affairs on the ENF (dated 4/29/99). CAC members took a moment to review the document and were then asked if they thought the checklist would be helpful. After discussion, the CAC indicated that they liked the document and wanted to have it available to refer to informally during their discussion and review. The CAC requested that an additional column be added with the question: "Does topic meet all 5 project objectives?" In addition, the CAC asked that the checklist be printed in landscape format and with one topic per page to provide more space on the document for note-taking.

III Discussion of Vision Statement / Executive Summary

The CAC engaged in extensive discussion regarding the Vision Statement/Executive Summary which included clarifying the purpose of the Executive Summary and who would be reading it and clarifying the role of the CAC which is to offer comments on the adequacy of the document not to rewrite or author it.

The CAC agreed that: a) tonight's comments would focus on the overall format, content and vision of the Executive Summary; b) the CAC would continue to review the

Executive Summary/Vision Statement during the review meetings on each of the individual topics it covers at which point members would identify specific points about that topic to be included in the Executive Summary; and c) the CAC would revisit the Executive Summary/Vision statement when it had concluded review of all the topics (at the end of their review meetings).

Summary of Consensus Comments: After full discussion among the group, the CAC reached consensus on the following comments regarding the Vision Statement and Executive Summary:

1. The Executive Summary needs to be stronger in order to be used as an advocacy document for the project and for funding. (It needs more "punch" and "passion".)

2. The Summary needs to more accurately reflect the presentations by the consultants at the CAC meetings, i.e., it needs to include all the reasons why these are the preferred alternatives – need to strengthen the project alternatives. Also, the Summary needs to tie in the project objectives, especially in Section 5.0 on Project Design.

3. The Vision Statement is not a vision statement as it stands. It is rather a statement of history and need. The Vision Statement needs to be a statement of the goals and philosophy of the project, e.g., needs to explain how the goal is to respect the historic fabric while meeting the needs of the 21st century.

4. The Executive Summary needs to more clearly explain that this project is just the first step, the foundation, for a much larger project/plan and that there is a sequencing of steps. This piece is to get the watercourse functioning, but there are other steps to follow.

5. The CAC recommends that the proponents/consultants engage one editor to review the entire summary and pull it together so that it is more coherent and balanced. At currently written, it is very uneven and reflects the fact that many writers have contributed to the various sections.

6. There should be two additional maps included in the Executive Summary which are more visual than technical. One map should be of the project area and the other of the entire Emerald Necklace Park system, in order to set the context for the project.

The following are the notes that were taken during the meeting on this topic :

- What does this section really need to do?
    - Snapshot of pref. Alternative, and why it's the right thing to do.
    - Need Vision statement – more of a PR piece.

- Add project description at the beginning.
- List of CAC members, and other organizations who participated at the beginning in chart form.
    - We are commenting not creating this document.
- Should communicate project in very clear and accurate way.
- If PR piece, needs to be visually attractive, needs to be more articulated. Not strong enough, language and concepts need work.
- Compelling arguments are missing from some sections.
- Vision statement will be revisited at the end at session 10.
- Vision statement needs to be a goal. Should say why we are doing the project.
- Executive summary was uneven, inconsistent, due to different writers. Which sections are weak and need more work?
    - Historic resources was too brief, weak, and confusing, and implications were confusing too.
- Divide and conquer method by topic. Does Executive summary summarize your topic?
- If PR piece for fundraising, needs Case Statement. Fundraising writer needed? Document needs punch, to be clearer.
- Perhaps we should discuss after all the topics are discussed.
- We should be offering comments, not authoring document.
- Document needs to be consistent across bullets and narratives. See Section 5, as example. Link back to objectives and say why they were chosen, especially for high cost items. See page 25 of Back Bay Fens.
- Best Management Practices is very weak. Needs to attack the issues. We need an Emerald Necklace administrator.
- In the PR piece, we should get beyond cut-and-dry issues, and discuss that this is larger than it appears, as national showcase.
- We could recommend to proponent to use a fund-raising writer to pull together a cohesive document.
- We should talk about BMP's , then revisit Executive Summary.

- Reactions are helpful as we read the sections. Perhaps a memo previous to the upcoming document, as discussed in the earlier meeting.
- We should follow the same process proponents use, as we go thru topics we visit executive summary afterwards.
- Identify which discussion points need to be in executive summary.
- Ask, have we missed anything?
- Need 2 maps (one of necklace and one of context of city/town), not technical map only. Needs to be more graphically pleasing.
- Incorporate the passion.
- Logic of steps involved needs to be clear.
- Hold off on Fundraising writer, go with Editor.

V Questions and Answers (General Public) & Wrap Up

Additional comments from non-CAC members present at the meeting:

- Caution on doing too much with the Executive Summary within the EIR. Perhaps more for advocacy document. EIR is more a technical document and needs to be objective.
  - Fundraising writer could do advocacy piece.
  - It's difficult to be neutral, and hard to water down.
  - Separate the two different types of advocacy – fundraising vs. environmental impacts.
- Vision statement should be more of the PR piece, while Executive summary should be directed more to the Secretary. Needs to be clear and concise. It will be the piece that most people will read.
- Strengthening document needs to have the why's more clearly.
- Project could use a brochure, and later a broad marketing campaign.
- Perhaps there could be a review by communications experts of vision statement by Emerald Necklace Conservancy?

Meeting Schedule

The next meeting of the CAC is scheduled for **Wednesday May 2, 2001 at 6:00 PM**. The topics to be discussed include **Project Alternatives**. The meeting will be in **440 Egan Center**, Northeastern University.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – Meeting Schedule (with CAC writers listed)

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

April 23, 2001

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Bimbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	Ed Cutler
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney, Hawkes	Frances Allou Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

April 23, 2001

Sign-In Sheet

Name		Affiliation	Signature
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	Arleyn A. Levee
John A.	Martin	Emerald Necklace Conservancy	
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	Paul J Mentag
Jane	Pfister	Brookline Resident	Jane Pfister
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	Marion Sabal
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

\\parksmail\bosepark\Muddy\CAC Meetings\CAC-17 Apr 23 2001__DEIR Review 1\[CAC Sign-in Apr 23 2001.xls]CAC Directory

Emerald Necklace Citizens Advisory Committee

Meeting

April 23, 2001

Sign-In Sheet

\\parkemail\bospark\Muddy\CAC Meetings\CAC-17 Apr 23 2001__DEIR Review 1\[CAC Sign-In Apr 23 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Simone Auster	ENC	617-722-9823	
John Burckardt	c/o BPRD	617 635-4505	jburckardt@ ci.boston.ma.us
Jan Henderson	MASCO	617 632-2762	jhenderson@ masco-harvard.edu
Fran Beatty	Boston Parks	635-4505	beatty@ ci.boston.ma.us
TOM BRADY	Brookline Conservation	730-2088	TOM_BRADY@ town.brookline.MA.US
David Mendelsohn	EOEA/DEM	6176261316	DAvid.Mendelsohn @State.MA.US
Claire Flury	95 Park Dr. ~~Boston~~, Ma. 02215	617-766-1169	
AlAN BANK	NPS/FLO N.H.S.	617-566-1689	AlAN_BANKS@NPS.GOV
Susan Jaghelian	MODR		
Jane Waller	"		
Bob McDonnell	NU		

Page 3 of 3

MEMORANDUM

DATE: April 24, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

PLEASE NOTE MEETING LOCATION!

Wednesday, May 2, 2001

Northeastern University

Egan Engineering /Science Research Center

Forsyth Street (next to Ruggles Station)

Room 440 (4th Floor)

This is a NEW LOCATION – not the Raytheon Amphitheater!

Take the stairs or elevator to the 4th floor.

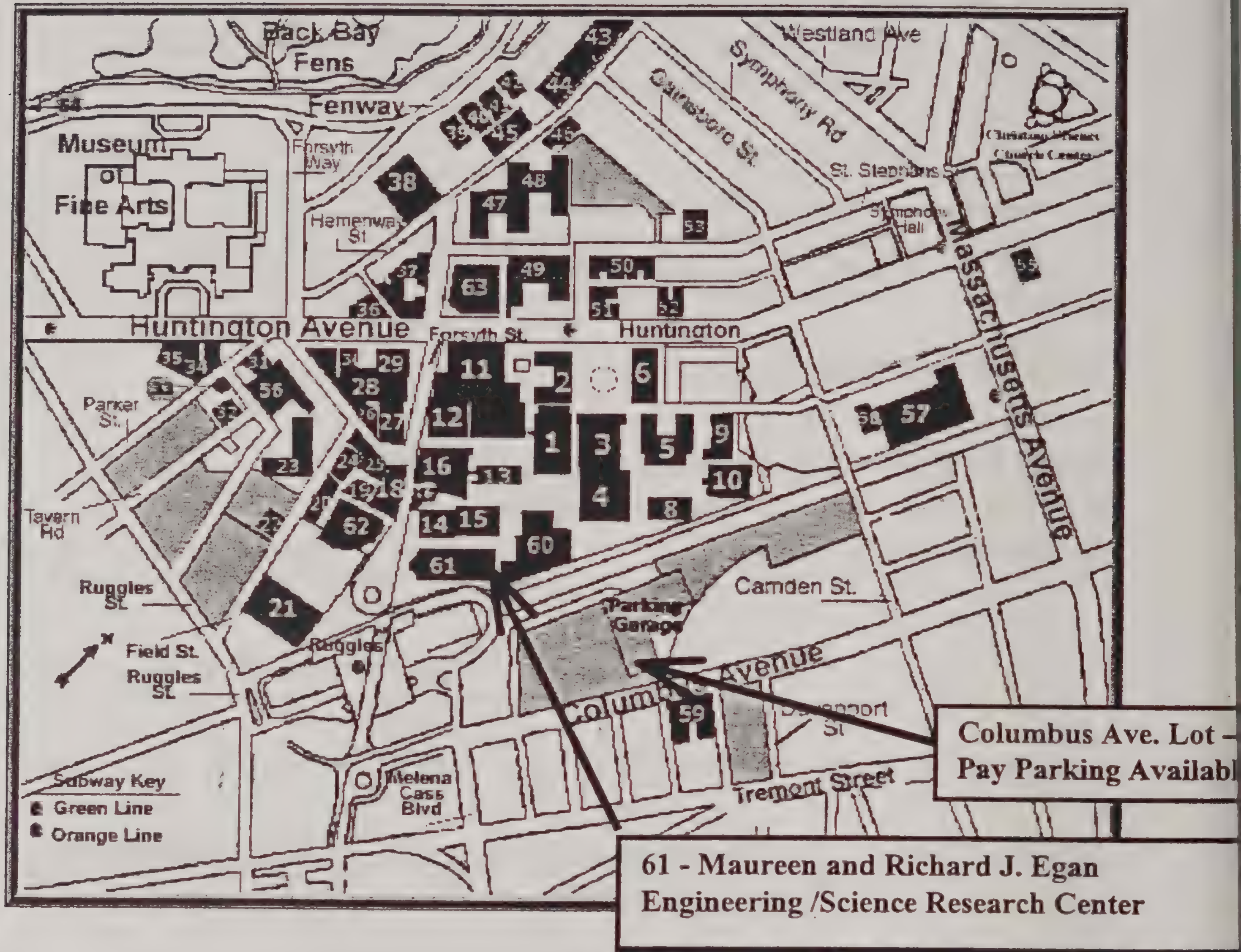
~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topic: Draft Environmental Impact Report (DEIR) Review #2: Project Alternatives

5:45 p.m. Refreshments
6:00 p.m. Discussion
8:30 p.m. Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to
Maureen and Richard J. Egan Engineering /Science Research Center
Room 440 – 4th Floor
NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot –
Pay Parking Availabl

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Egan Engineering/Science Research Center

Room 440 (4^{th} Floor)

Wednesday, May 2, 2001
6:00p.m. - 8:30p.m

Agenda

I.	**Welcome, Opening Remarks & Comments Received** ***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator* ***Jane Wells,** MA Office of Dispute Resolution, CAC Facilitator* ***John Burckardt, P. E**, Project Manager*	6:00 - 6:15
II.	**Process Issues/Organization** ***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*	6:15 - 6:30
III.	**Discussion of Project Alternatives** ***Jane Wells**, MA Office of Dispute Resolution, CAC Facilitator*	6:30 – 8:20
IV.	**Questions and Answers (General Public) Wrap Up**	8:20 – 8:30

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes –May 2, 2001 CAC Meeting

Northeastern University Egan Center, Room 440

Meeting Attendees

Meeting Agenda

I **Welcome, Opening Remarks & Comments Received**

Jane Wells, MA Office of Dispute Resolution
Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II **Process Issues/Organization**

Hugh volunteered as a backup BMP's writer
Isabella volunteered as a Miscellaneous writer
CAC agreed that CDM consultant may attend to hear comments.
Look at Checklist questions before topic discussion and revisit relevant questions at end of discussions

III **Review of Draft Comments – None this week**

IV **Discussion - Project Alternatives**

FLOOD CONTROL

- Make stronger point that removal of root mass necessary to improve flow.
- Bullet/bold conclusions on the preferred alternative at the end of each section.
- Example 2-7 , highlight daylighting of Sears parking lot as restoring historic alignment.
- Bullet/highlight more clearly the options which were explored in the subsections.
- Screen or grid that walks us thru what was done or summarizes and gives conclusions

- Include cross referencing to Section 5 on the preferred alternative.
- Balance technical presentation with ease of reading.
- Have CDM explain at next mtg rationale for why DEIR is presented in this fashion.
- Deal with long and short term environmental impact, construction cost, and maintenance cost in each preferred alternative section.
- Equal treatment in each section for all the variables.

BMP'S

- 2.3.7 Explain plans for daylighting the culvert between Willow Pond and Leverett Pond or otherwise restoring flow to the Babbling Brook. Also include discussion of plans for both upper and lower sections of Babbling Brook. Need to reference Master Plan and Brookline's CIP. Need for clarification.
- P. 2-96 , 2.5.2.4 Language should be stronger regarding illegal connections. Reference relevant laws. Insert expected dates. The proponents should provide details how they are address this problem. Include on what has been done up to date.
- P. 2-97, 2.5.2.6 First part of section is inaccurate, should include responsibilities of all proponents and other responsible parties, in the form of list/chart. Within actions, "should" vs. "is" needs to be clarified.
- Should be held to equal standard. – PARKING LOT – revisit in BMP's discussion.
- P. 2-97, 2.5.2.6 No mention of composting, should be included.
- 2.5.2.5 End paragraph, haz waste and paint recycling collection locations need to be more convenient for residents, increase accessibility and frequency.

- P 2-97, 2.5.2.2, Second paragraph is inaccurate, and should reflect reality on catchbasin stenciling.

- Table 2.2, p. 6 of 6, Chart implies that MDC cleans catchbasins daily after grass season, P. 2-95 2.5.2.1, The page states MDC does not have formal program. Inconsistent statements between table and text.

- Look for references about calendar of maintenance in Section 8. Annual schedule of maintenance should be published for public.

- Want accuracy on what's currently going on, what Brookline, Boston, and MDC are responsible for, and what they plan on doing about it. Look in BMP on whether responsibility has been designated.

- Table 2-3, needs to clarify visually preferred alternatives and degree to which they meet project objectives. Clarify what Bold text means, its unclear and incomplete. Include footnote for what bold text means.

- P. 2-98, 2.5.2.7, final paragraph;

- Section should be accurate of current conditions, and CAC should comment on specific recommendations and details, and should reach clear conclusion on what preferred alternative is.

- MDC Issues for Parking Lot for June 13 Meeting on Miscellaneous topic. Request a rep from MDC to provide information on accountability of MDC at June 13 Meeting.

V Questions and Answers (General Public) & Wrap Up

PUBLIC COMMENT

- Maintenance – MDC and litter needs to be addressed. Promote cleanliness.

Attachment 1

merald Necklace Citizens Advisory Committee
eeting
ay 2, 2001

Sign-In Sheet

Name		Affiliation	Signature
athy	Baskin	Charles River Watershed Association	
harles Alan	Birnbaum	National Park Service	
dward	Burke	Restore Olmsted's Waterway Coalition	
sabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	Christine Cooper
Edward	Cutler	Brookline Resident	Ed Cutler (Hm)
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	Frances Allon Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	
Richard	Heath		
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

May 2, 2001

Sign-In Sheet

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		
Paul	Mentag	Fenway Alliance	Paul Mentag
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

I:\Ex.Off. of Env Affairs\Emerald Necklace\[CAC Sign-in May 2, 2001.xls]CAC Members merald Necklace Citizens Advisory Committee

Meeting

May 2, 2001

Sign-In Sheet

Ex Off. of Env Affairs\Emerald Necklace\[CAC Sign-In May 2, 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Jane Wells	MDR	617-727-2224	x21122
Claire Fleury	Member Garden Soc. 95 Park DR.	Tel 617.266-1169	
Anne Covert	14 Monmouth ct Brookline	617.738.0107	
John Burckardt	PB c/o Boston Parks	617 635-4505x6517	jburckardt@ ci.boston.ma.us
Dave Langseth	Northeastern U	617-373-3992	langseth@coe.neu.edu

MEMORANDUM

DATE: May 2, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice, New CAC Directory**

PLEASE NOTE MEETING LOCATION!

Monday, May 7, 2001

Northeastern University

Egan Engineering /Science Research Center

Forsyth Street (next to Ruggles Station)

Room 440 (4th Floor)

This is a NEW LOCATION – not the Raytheon Amphitheater!

Take the stairs or elevator to the 4th floor.

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topic: Draft Environmental Impact Report (DEIR) Review #2: Project Description/Preferred Alternative

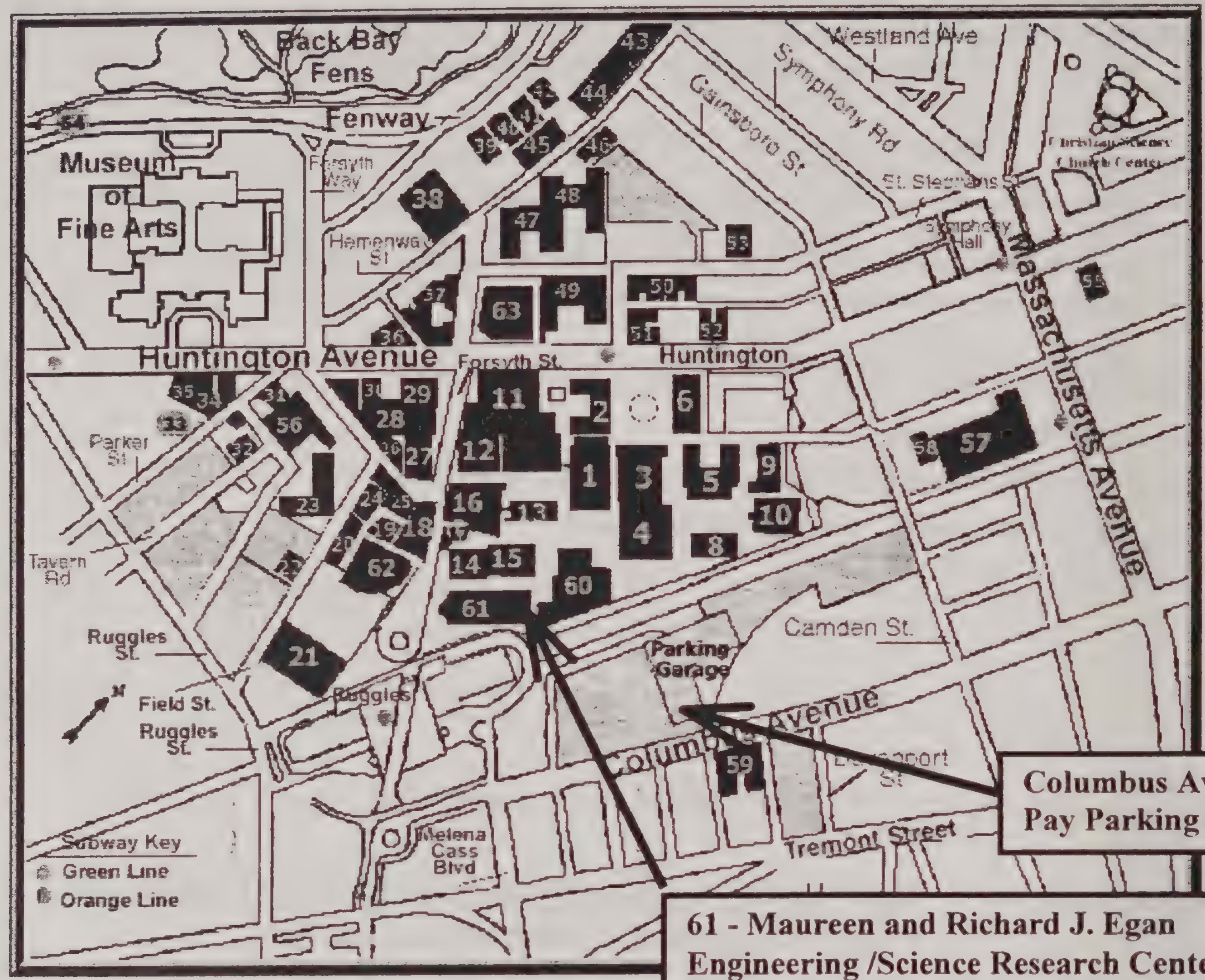
5:45 p.m.	Refreshments
6:00 p.m.	Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Enclosures:

1. ***Updated*** CAC Directory — Please add to Tab #4 of the CAC Workbook

Directions to
Maureen and Richard J. Egan Engineering /Science Research Center
Room 440 – 4th Floor
NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot -- Pay Parking Available

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Egan Engineering/Science Research Center

Room 440 (4th Floor)

Monday, May 7, 2001
6:00p.m. - 8:30p.m

Agenda

I.	**Welcome, Opening Remarks & Comments Received** ***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator* ***Jane Wells,** MA Office of Dispute Resolution, CAC Facilitator* ***John Burckardt, P. E**, Project Manager*	6:00 - 6:15
II.	**Process Issues/Organization** ***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*	6:15 - 6:30
III.	**Review of Draft Comments: Vision Statement/Executive Summary** ***Jane Wells,** MA Office of Dispute Resolution, CAC Facilitator*	6:30 – 7:00
IV.	**Discussion of Project Description/Preferred Alternative** ***Susan Jeghelian**, MA Office of Dispute Resolution, CAC Facilitator*	7:00 – 8:20
V.	**Questions and Answers (General Public) Wrap Up**	8:20 – 8:30

BOSTON
Thomas M. Menino, Mayor

EMERALD NECKLACE
ENVIRONMENTAL IMPROVEMENTS MASTER PLAN
AND
PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT AND HISTORIC PRESERVATION

MEMORANDUM

DATE: May 8, 2001

TO: CAC Members Who Were Not in Attendance at the May 7, 2001 Meeting

FROM: John Burckardt

RE: Meeting Handouts

Enclosed are handouts from the May 7, 2001 CAC meeting, review of the Project Description (Section 5 and Appendix I) of the Draft Environmental Impact Report.

- Agenda
- Draft Comments on the Vision Statement/Executive Summary -- *these comments were compiled by L. Meier with George Hagerty from the summary of the CAC's comments at the April 23, 2001 CAC meeting.* If you have any comments, please forward them to Lauren Meier (see CAC directory tab #4 for Lauren's e-mail address & phone)
- Comments by Richard Heath on Maintenance and Monitoring (Section 8 of the DEIR). *This topic will be discussed at the CAC meeting on May 30, 2001.*

Meeting notes are separately distributed.

Next meeting is Wednesday, May 16, 2001, 6pm, in Room 440 of the Egan Center at Northeastern University.

\\parkmail\bostonpark\Muddy\Correspondence\20010508 memo CAC-handouts of 5-7-01 CAC

Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

RICHARD HEATH
Landscape Historian

42 Bourne Street • Jamaica Plain, Massachusetts 02130 • 617.522.7431

May 6, 2000

TO: Emerald Necklace CAC members

FROM: Richard Heath RH

RE: Maintenance & Monitoring draft comments

Attached are my brief and rough comments on maintenance and management.

As written, the M&M section simply recommends a committee of senior parks staff of Brookline and Boston who will convene from time to time to review a schedule, a general list of personnel and equipment and a list of tasks and how to do them.

The responsibilities of the MDC are not mentioned at all despite the fact that mammoth amounts of water, salt and rubbish cascade annually off the crumbling, clogged shoulders of the parkways under their jurisdiction into the Back Bay Fens and Muddy River.

If we mean to talk about the largest public parks work project in the history of the Emerald Necklace (not to say Boston), then we must be bold and courageous and face the fact that we need a completely different management entity that may include many of the people in place today together with additional people with different skills . There has never been enough money or staff to manage the Emerald Necklace but no one has determined how much money or staff are required. The DEIR is defective until it states those two facts.

We cannot state to the penny how much it will cost to rebuild the waterparks but not to know the annual cost of maintenance. We must know what the MDC does and how much it spends on maintaining the parkways under its jurisdiction. If they don't know then we have professional consultants who can tell us.

We must be unflinching and recognize two things which don't work: multiple jurisdictions and centralized management.

The Emerald Necklace - not just the waterparks, but from Charlesgate to Blue Hill Avenue - requires a single manager, staff and maintenance division and its integral

parkways must be returned to the jurisdiction of the City of Boston which bought, paid for and built it in the first place.

How those two things are accomplished and how much it will cost annually must be spelled out in the DEIR.

Those of us on the CAC must understand that $96 million is being spent on about 200 acres of the Emerald Necklace. Franklin Park has historic landscapes and architecture too that are long overdue for restoration. If I was an advocate for Franklin Park I would ask about our share. We must be prepared to build the political base required to convince the Mayor that he must add (say) $5 OR $6 MILLION DOLLARS A YEAR TO THE PARKS DEPARTMENT BUDGET FOR THE SIX PARKS OF THE EMERALD NECKLACE ONLY.

What we do in those 200 acres will benefit the entire Emerald Necklace and we must put the Muddy River/Back Bay Fens work in that context.

If we can point to bold, new local level initiatives and commitments such as increased operations budgets, a new, decentralized management structure and the necessary enabling legislation that returns the parkways back to Boston and folds the Necklace into one management entity, we will be far more assured of getting $96 million from the federal government than the timid, patchwork approach to maintenance and management as presently described in the DEIR.

MANAGER OF EM.

- WHAT DOES IT COST TO RUN THE PARK?
- IS THERE POLITICAL WILL TO FIND THOSE $$

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted DEIR IGNORES THE MOST IMPORTANT FACT
Maintenance and Monitoring				NO ONE ENTITY IS IN CHARGE OF THE EMERALD NECKLACE
The EIR should describe in detail the proponent's maintenance management plan for maintaining the restored condition of the Muddy River and the Emerald Necklace parks. DEPENDS TOO MUCH ON EXISTING SYSTEM WHICH DOES NOT WORK WELL.	Yes	NO MDC RESPONSIBILITIES IGNORED	Yes	• MORE SPECIFIC DETAIL ON ADMINISTRATION OF EM. NECKLACE • REALISTIC + ACCURATE MAINTENANCE STAFFING NUMBERS. • ANNUAL COST OF MAINTENANCE CREW • MDC RESPONSIBILITIES IGNORED. • DEPENDS TOO MUCH ON OUTSIDE CONTRACTORS.
The EIR should describe ongoing measures to prevent the recurrence of invasive vegetation that has been removed.	Yes	NO	YES	• BARELY ADDRESSED. • APPROPRIATE PROFESSIONAL STAFF. ANNUAL COSTS. • EQUIPMENT, STAFF TO RUN EQUIPMENT • MANAGEMENT STAFF TO RE EDUCATE PUBLIC AS WELL AS EMPLOYEES ON CARE OF LANDSCAPIN
The EIR should include commitments to maintain the restored historic landscape and structures.	Yes	No	Yes.	• WEAKEST OF ALL. • REQUIRES HIGH LEVEL STAFF • TOO MUCH RELIANCE ON CONTRACTORS.

- FILE LEGISLATION CREATING EM. NECKL. MANAGER + STAFF?

- FOLD ALL MDC RESPONSIBILITIES INTO SINGLE MANAGEMENT ENTITY
  FILE LEGISLATION TO REMOVE MDC

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Maintenance and Monitoring				
The EIR should include protocols for regular monitoring of environmental conditions to provide a continuous feed-back loop by which the effectiveness of management practices can be measured.	yes	Not at all	yes.	. The DEIR must state that, a separate management entity is required. The DEIR must include the costs of administration of this park system.
The EIR should define the proportional financial responsibilities of the City of Boston and the Town of Brookline for all short-term and long-term maintenance and monitoring measures related to the project.	NO	NO	NO	NO Park system budget was included that is realistic. ANNUAL SALARIES + COSTS OF: - ADMINISTRATION - MAINTENANCE / MANAGEMENT - RANGERS
				- PROGRAMMING WHAT DOES A $96 MILLION PROJECT COST TO MAINTAIN?

WHERE DOES FRANKLIN PARK FIT INTO THIS [illegible]?

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – May 7, 2001 CAC Meeting
Northeastern University Dodge Hall, Room 440

Meeting Attendees (see enclosure)

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator
Jane Wells, MA Office of Dispute Resolution, Co-Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

II Process Issues/Organization

- Writers give comments to John B. by Floppy Disk or e-mail Attachment project electronic version.

- How far can CAC go in suggesting changes to make the DEIR and/or the Executive Summary more of an advocacy document and not undermine the chances for success of this project in its next phase of review by the Secretary of EOEA. (Proponent will check with MEPA and report back at next meeting).

- The CAC comments will focus on both style and content/substance for the Executive Summary and primarily on content for the remainder of the document, with style being secondary.

- The CAC reserves the right after this pre-filing review process (making this document the strongest it can be) to comment on aspects of the project as a CAC, giving public input to the Secretary.

-

III Review of Draft Comments – Vision Statement/Executive Summary

- Item 9 – Illustrate MDC/other jurisdictions in map form.

- CAC members will call, email or flag Lauren at future meetings with additional comments for Executive Summary and the CAC will review all Executive Summary comments when the Executive Summary is revisited at the end of the process.

- Vision Statement 1 & Public Relation 10 – Ask for Arleyn's presentation at the museum last week to be incorporated in a vision statement and/or stand-alone public relations document.

IV Discussion of Project Description/ Preferred Alternative

- Add information to highlight that this is part of a larger project.

- Struggles with terms such as restoration and rehabilitation.

- Want to see comments addressed in more direct way. Feels project is a rehabilitation. Features of rehabilitation would be using historic documents.

- There are enormous parts of rehabilitation that will not be done until there is a larger project in the future.

- It is not possible to restore the river.

- The term we are using is rehabilitation in this document for the Secretary and should be defined in the glossary.

- Do a word search for restoration, rehabilitation and primary and secondary periods of significance through the entire document.

- **Need to use more detail to describe what's being done and clarify the previously mentioned terms. The terms need to be consistent with the terms as they are defined by the Secretary of the Interior.**

- **Want to have a glossary of terms (if the term is just a one or two word explanation, it could be added within the document).**

- Make a list of future priorities which have the biggest impact on the project.

- Should hold to scope and not ask for too much. Need to look at cost containment as much as possible.

- Limit lines are in DEIR.

- Need to maintain clear boundaries and scope of work.

- **This project has its limits and only applies to certain areas.**

- The ongoing management and maintenance pieces can cover broader scope.

- Charlesgate

- 5.1 on p. 5-2, "installation of new park benches **and trash cans.**"

"Virtual" Parking Lot

- 5.1.5, insert paragraph about the initiation of public processes in future for park restoration beyond the existing project. MDC and City of Boston should create new CAC that begins public process that hasn't been done. The prior Charlesgate Charette (Community Outreach Group) would be incorporated into the process. Any process needs to be conscious of the future restoration of the Bowker overpass.

- The proponent should work with CAC to come up with a process that involves MDC and other appropriate agencies or entities (move to parking lot).

- Capture in Vision Statement/Executive Summary Muddy River project is a public works project and should be publicly funded, which will act as a magnet for other privately funded rehabilitation projects. The previous comment is relevant if included in the appropriate parts of the document, particularly the **Executive Summary and Vision Statement**.

- ES-26 – Bullet 5 (the Riverway), replace "should" with "will". On Figure 5-26, they say they "will" conform to schedule. At top of ES-26 (Back Bay Fens), twelth bullet, change "should" to "will" and "set curbs and catch basins.

- Page 5-2, consultants should include incentives to contractor to lower costs on dredging disposal. Can include a statement regarding incentives for reducing costs in the FEIR. Cost savings need to be balanced against environmental and historical concerns, as well as legal and practical ways. As part of contract documents "best management practices" are routinely included.

- **The CAC supports cost savings incentives for innovative approaches to constructions methodologies (could be included in cost section, 10).**

- P. 5-7, Section 5.1.5, □tabi paragraph – Define/clarify "in-kind". Addition – "certified arborist and professionally trained □tabilizing□sts."

- Figure 5.4, The shading key for the phragmites on the south side of Agassiz Bridge dropped out on the printing. Boundaries are there but shading isn't.

- 5.2.2, P. 5-13 - Intro needs to be more extensive and more strongly written. Questions whether "day-lighting" is a strong enough term for this. Need to add history to set the stage for the work that's been done ie. Dates, prior owners, etc. Include term "day-lighting" in glossary. This resulted in legislation.

- Louis Pasteur is also known as Higginson Circle.

- **Include description and discussion to remove the "jug handle" and its benefits to the project as presented in Boston Transportation Dept. public processes.**

- 5.2 Back Bay Fens, How long will it take to replant after removal of staging area? Should define schedule for replanting in all section of the river.

- 5.2.2.1 Is there any improvement to street crossing for bike path across Brookline Ave. at Sears? Bike crossing isn't diliniated. This might be already included in text.
- P. 5-21, Want to make sure that a restoration planting conforms to standard horticultural practices (referring to staging areas).
- 5.2.7, Need to consider long-term maintenance of plantings when choosing from plant lists (this comments is applicable to other parts of section 5 that refer to plant lists or Olmsted palette).
- 5.4.2 P. 5-45, Construction Staging - What does "can proceed independently" mean?
- P5-49, second to last bullet "The goal will be to disturb the two larger…." Discussion on □tabilizing the edges of the idlands should be included.
- P. 5-47, first full paragraph – Very little reference to Olmsted's intent. "These will provide …. That Olmsted intended." Explain the sub-areas of primary and secondary periods, for example, so how can you do this when the ball-fields are still there. Explain the proposed viewsheds and plant massings and how they relate to the Olmsted design.
- Table 5-5. States, there is no impact in water quality from the dredging of Willow Pond. Check to make sure all charts agree.
- Further comments will be sent to writers and flagged.

V Questions and Answers (General Public) & Wrap Up

- There were no questions or comments from the public.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – Schedule

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

May 7, 2001

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	E J Burke
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J Kemp

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

May 7, 2001

Sign-In Sheet

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	[illegible] Levee
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	Paul Mentag
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen T. Woodford

Emerald Necklace Citizens Advisory Committee

Meeting

May 7, 2001

Sign-In Sheet

S:\Ex.Off. of Env Affairs\Emerald Necklace\CAC Sign-in May 7, 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Jane Wells	MODR	617-727-2224	
Susan Jeghelian	MODR	617-727-2224 x21174	
Kara Tollier	Fort Point Ass	617-357-7044 x 208	
Dave Noonan	CDM	617-452 6215	
Mark Swartz	Frederick Law Olmsted NHS	617-566-1689	
Fran Beatty	Mas. Parks	617-635-4505	

Print Date: 05/07/01

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE
Review of Draft Environmental Impact Report

	Day	Date	Topic for Discussion	WRITERS	Review of Draft Comments	Location
1	Mon.	23-Apr-2001	*Vision Statement/Executive Summary*	*Frances Kemp, George Hagerty, Lauren Meier*	(none)	450 Dodge Hall, NU
2	Wed.	02-May-2001	*Project Alternatives* *Section 2*	*Paul Mentag*	(none)	440 Egan Center, NU
3	Mon.	07-May-2001	*Project Design/Preferred Alternative* *Section 5, Appendix I*	*Arlene Mattison, Eileen Woodford*	*Vision Statement/Executive Summary*	440 Egan Center, NU
4	Wed.	16-May-2001	*Project Impacts and Mitigation* *Sections 6, 7 and 9*	*Ed Cutler, Eileen Woodford,*	*Project Alternatives*	440 Egan Center, NU
5	Mon.	21-May-2001	*Best Management Practices* *Section 2.5 and 5.7*	*Fredericka Veikley?, Kathy Baskin, Hugh Mattison*	*Project Design/Preferred Alternative*	450 Dodge Hall, NU
6	Wed.	30-May-2001	*Maintenance and Management* *Section 8*	*Hugh Mattison, Suzanne Comtois*	*Project Impacts and Mitigation*	96 The Fenway, NU Faculty Lounge
7	Mon.	04-Jun-2001	*Funding* *Section 10*	*George Proakis, Fran Gershwin, Marion Sabal*	*Best Management Practices*	450 Dodge Hall, NU
8	Wed.	13-Jun-2001	*Miscellaneous* -MDC *- Public/Agency Involvement: Section 3 &Appendices K and L* *- Existing Conditions: Section 4 & Appendices B, C, D, E, F, G and H* *- Emerald Necklace Master Plan: Appendix A* *- Introduction: Section 1* *- Responses to ENF Comments: Appendix J* *- Other Issues Not Included in Above Topics*	*George Proakis, Isabella Callanan*	*Maintenance and Management*	96 The Fenway, NU Faculty Lounge
9	Wed.	20-Jun-2001	*Vision Statement – Revisit*	*Richard Heath, June Hatfield*	*Funding*	440 Egan Center, NU
10	Mon.	25-Jun-2001	*Open*	*Fran Gershwin, Gary Hilderbrand, Richard, Heath, Arleyn Levee*	*Miscellaneous / Finalize Comment Letter*	450 Dodge Hall, NU

DRAFT Comments on the Vision Statement / Executive Summary
Emerald Necklace Citizens Advisory Committee

May 7, 2001

GENERAL COMMENTS

Vision Statement

1. The Vision Statement is not a vision statement as it is currently written. Rather, it is more of a general historical overview and statement of need for the project. While these sections are appropriate in the Executive Summary, the Vision Statement should be a statement of the goals and philosophy of the project, to set the stage. For example, it should explain the goal to respect the historic character of the Emerald Necklace, while simultaneously meeting the needs of the 21st century. The current Vision Statement could be re-organized into three parts: Vision (philosophy), Historical Overview, and Statement of Need (see specific comments, below).

Relationship with Emerald Necklace Master Plan

2. The Executive Summary needs to more clearly explain the relationship between this project and the Emerald Necklace Master Plan. This project is just the first step, the foundation, for a much larger project/plan that will ultimately achieve the goals of the Master Plan. The current project will repair the Muddy River watercourse as the spine of the park system, but there are many other steps to follow to achieve a fully rehabilitated park.

3. Some clarification of the terms "Emerald Necklace" vs. Muddy River vs. this project area would be helpful.

Project Objectives

4. Overall, the Executive Summary needs to tie in the project objectives and to explain why alternatives, options, approaches are desirable or recommended since many readers have not had the opportunity of hearing the consultants presentations.

Style/Presentation

5. A diverse audience will likely read the Executive Summary. Therefore, in order to create a stronger justification for the project, the text should be presented to in such a way (stylistically) to capture the interest of the reader. In other words, it needs more "punch" and "passion". (see also editing notes, below)

6. The Executive Summary needs to be clearly and succinctly written to present a stronger and more accurate representation of the project as it was presented by the consultants. For example, general statements regarding the project alternatives should also contain a clear reason WHY the action is the preferred solution.

7. As written, the Executive Summary has been obviously written by many individuals and is therefore uneven and difficult to read. To achieve many of the comments above related to clarity, "punch," and flow, he CAC recommends that the proponents/consultants engage one editor to review the entire summary, and edit it so that it is more coherent and balanced. At currently written, it is very uneven and reflects the fact that many writers have contributed to the various sections. Technical terms should be either explained or eliminated. An editor can easily remove jargon. Avoid word repetition.

8. The Executive Summary should be illustrated and designed to enhance the understanding of the reader. This could be done with headings, illustrations, and maps.

9. There should be two additional maps included in the Executive Summary, which are more visual than technical. One map should be of the project area and the other of the entire Emerald Necklace Park system in the context of Boston and Brookline, in order to set the context for the project. The maps need to be more graphically readable, especially to a non-technical reader.

Public Relations

10. The CAC recommends that the proponents, perhaps in partnership with the Emerald Necklace Conservancy, engage a writer/editor/designer to prepare a strong advocacy/descriptive marketing piece derived from the Executive Summary and Vision Statement. This publication should be written for a general, non-technical audience and be visually attractive. It could be distributed widely, provide public information, and help communicate the outcome and benefits of the project to political and financial supporters. It might be prepared as an expanded brochure or Prospectus that is well illustrated with a combination of historic photos, contemporary photos (including flooded conditions) and maps.

SPECIFIC COMMENTS

Note: specific comments on the Executive Summary may also be developed as additional issues come up, after each section of the full EIR is reviewed, and at the close of the CAC review process.

1.0 Overview

1. Reorganize and strengthen section 1.0 to include the following:

    A. Vision - see notes above

    B. Historical overview - the information (currently contained different section of 1.0 Overview) should be checked for accuracy and clarity, with specific attention to the following:

    - Did Olmsted coin the term "Emerald Necklace?" When was the term first used? What portion of the necklace is comprised of project boundary from Ward's Pond to the Charles River? Show a map.
    - Is the Emerald Necklace really the oldest park system in the country?
    - Include dates of significant events to help explain the intent of the alternatives.
    - Include illustrations

    C. Statement of Need (problem definition, incorporate elements from other sections)

    D. Project objectives - elaborate

    E. Project Schedule and Phasing

    F. Compliance/Review (MEPA, etc.)

2. Figure 1 is very difficult to read as the Muddy River waterway, Charles River, Streets, landmarks are not clear. These maps need to present the information clearly to the reader.

2.0 Project Alternatives

1. Figure 2 is very difficult to read as the Muddy River waterway, Charles River, Streets, landmarks are not clear. These maps need to present the information clearly to the reader.

2. Improve Flood Control - the alternatives should be clarified, to explain what all the options are, and second, which combination of options best achieves the flood control objective. As presented, this is not clear. Additional issues such as infrastructure repairs, dredging methods, Phragmites removal, and staging areas should be captured under a separate sub-heading.

3. Improve Water Quality - explain why the recommended alternatives are dredging, source control, and BMPs

4. Enhance Aquatic and Riparian Habitat - clarify last 2 sentences (explain why)

5. Restore Landscape and Historic Resources - is this restoration or rehabilitation according to the Secretary's Standards? Eliminate the word "landscaping." Explain the difference between the primary and secondary periods of significance and why they effect work on the ground. Why does respecting the significance of the landscape conflict with modern use? Rehabilitation is the treatment intended to both retain historic character and adapt the property to contemporary uses. It is also the treatment of choice when substantial repair work is required. Consider avoiding the terms "primary and secondary periods of significance" altogether and use more descriptive language such as "re-establish the historic character of the vegetated shoreline, based on its configuration circa 18–".

6. Institute BMPs

3.0 Public/Agency Involvement - refer to list of proponents and CAC members at end of E.S.

4.0 Existing Conditions

5.0 Project Design and Construction

1. Need to tie the bullets back to project objectives to explain why the preferred alternatives are desirable and essential. Link the recommendations/alternatives to the project objectives and say specifically why they were chosen, especially for high cost items.

2. Best Management Practices is very weak. Need to explain how to achieve BMP's given the multiple jurisdictions.

6.0 Assessment of Impacts

7.0 Environmental Mitigation

8.0 Management and Maintenance Plan

9.0 Regulatory Requirements

10.0 Funding Strategy

DRAFT Comments on **Project Alternatives**
Emerald Necklace Citizens Advisory Committee

May 16, 2001

GENERAL COMMENTS

At first blush, the members of the CAC expressed concern that this section lacked a clear conclusion and in some cases confused the reader. We further commented that the preferred alternative should be more clearly demonstrated.

It has since been learned by this writer through a conversation with CDM that the MEPA process norms suggest that this section illustrate all of the project alternatives and their analysis in a straight forward and non biased format. I therefore recommend that the CAC focus on the substantive content portions of this section and trust that the presentation is appropriate to the intended audience.

SPECIFIC COMMENTS

Flood Control

2.1.5 - Given the invasiveness of the *Phragmites*, it should be clearly stated that the dredging should include root mass removal in order to prevent a reoccurrence of the plant material. Writer's comment – is this necessary given the language on page 2-39 last paragraph? I believe that the last 5 bullets under this section are rendered moot relative to the MEPA format approach described above.

BMP'S

2.3.7 Explain in more detail the plans for daylighting the culvert between Willow Pond and Leverett Pond or otherwise restoring flow to the Babbling Brook. Also include discussion of plans for both upper and lower sections of Babbling Brook. Need to reference Master Plan and Brookline's CIP.

P. 2-96 , 2.5.2.4 Language should be stronger regarding illegal connections. Reference relevant laws; the proponents should provide details how they are addressing this problem. Include on what has been done up to date. In the second paragraph of this section change "was considered a BMB" to "is" considered a BMP

P. 2-97, 2.5.2.6 First part of section is inaccurate, should include responsibilities of all proponents and other responsible parties, in the form of list/chart. Within actions, "should" vs. "is" needs to be clarified

2.5.2.5 Hazardous waste and paint recycling collection locations should to be more targeted to areas close to the Muddy River; also the frequency of collection days should be raised.

2.5.2.2 Catchbasin Stenciling – The second paragraph is inaccurate. The municipalities have not demonstrated activity on a catchbasin stenciling program. This reality should be made clear.

Table 2.2, p. 6 of 6, Chart implies that MDC cleans catchbasins daily after grass season, P. 2-95 2.5.2.1, This page states MDC does not have formal program. Inconsistent statements between table and text.

CAC is seeking accuracy and presentation clarity on current BMP activity by Brookline, Boston and the MDC. Also seeking clarity on respective responsibilities and coordinated effort where impacts overlap in multi-jurisdictional areas.

Table 2-3, needs to clarify visually preferred alternatives and degree to which they meet project objectives. Clarify what Bold text means; recommend an insertion of a few how-to sentences to help the reader use this valuable table.

Closing Comment to CAC Colleagues:

I am one pair of eyes; please scrutinize and adjust as consensus dictates. Sorry to be unavailable at this meeting.

MEMORANDUM

DATE: May 9, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

PLEASE NOTE MEETING LOCATION!

Wednesday, May 16, 2001

Northeastern University
Egan Engineering /Science Research Center
Forsyth Street (next to Ruggles Station)
Room 440 (4th Floor)

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topic: Draft Environmental Impact Report (DEIR) Review #4: Project Impacts & Mitigation

5:45 p.m.	Refreshments
6:00 p.m.	Discussion
8:30 p.m.	Adjourn

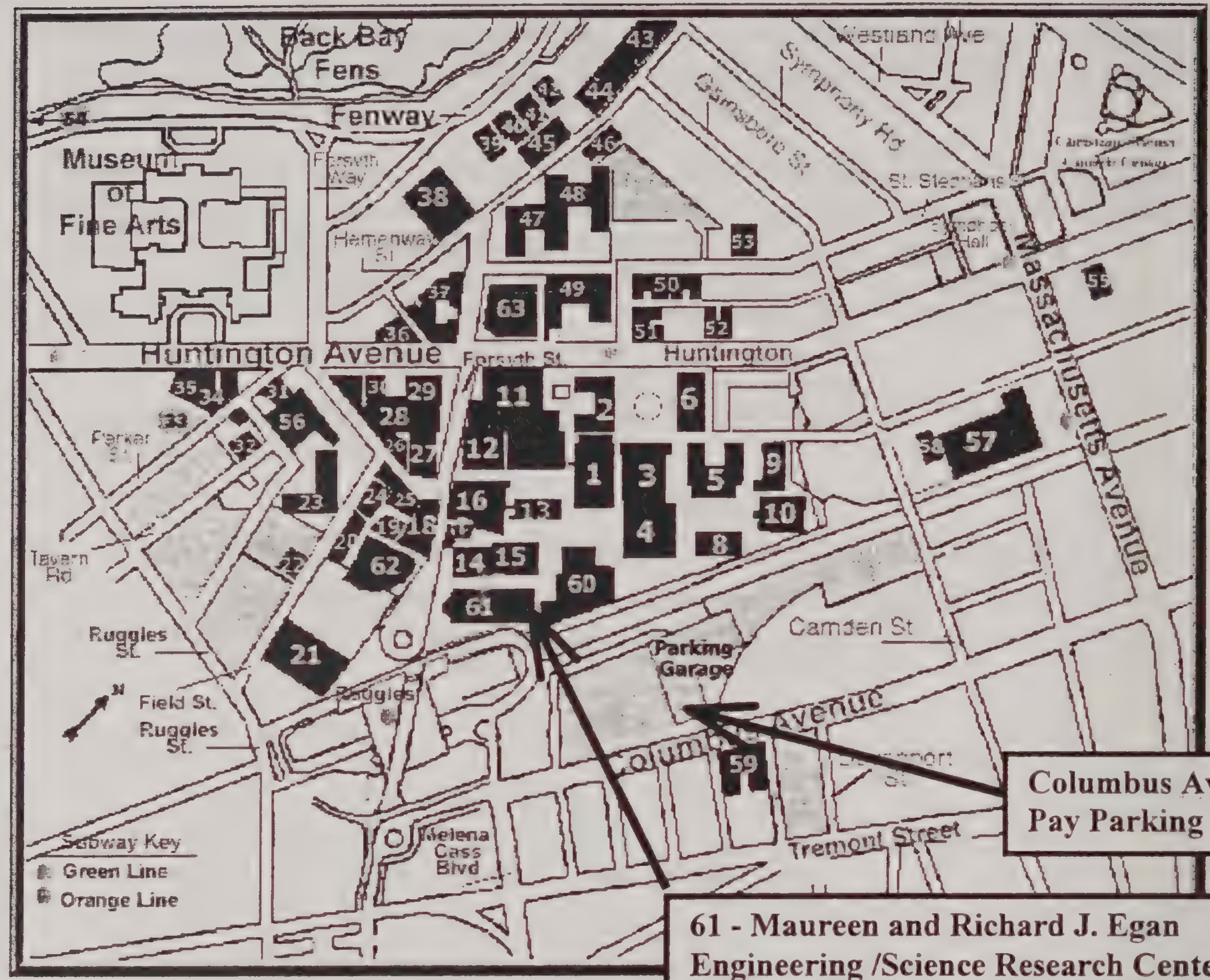
If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to

Maureen and Richard J. Egan Engineering /Science Research Center

Room 440 – 4th Floor

NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot -- Pay Parking Available

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Egan Engineering/Science Research Center

Room 440 (4th Floor)

Monday, May 16, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:15

Jane Wells, *MA Office of Dispute Resolution, CAC Facilitator*
John Burckardt, P. E, *Project Manager*

II. Process Issues/Organization 6:15 - 6:30

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Susan Jeghelian*, MA Office of Dispute Resolution, CAC Facilitator*

III. Review of Draft Comments: Project Alternatives 6:30 – 7:00

Jane Wells*, MA Office of Dispute Resolution, CAC Facilitator*

IV. Discussion of Project Impacts and Mitigation 7:00 – 8:20

Jane Wells*, MA Office of Dispute Resolution, CAC Facilitator*

V. Questions and Answers (General Public) Wrap Up 8:20 – 8:30

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Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – May 16, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
John Burckardt, P.E., Project Manager, Boston Parks and Recreation Department

- CDM is sending out corrected versions of DEIR with missing pages
- Hugh's comments in slide presentation to be distributed to CAC
- Pick up copies of directory member list, May 2 and April 23 summary notes.

II Process Issues/Organization

- Susan spoke to Laura Rome at MEPA about the CAC's question at the last meeting: "How far can CAC go in suggesting changes to make the DEIR and/or the Executive Summary more of an advocacy document and not undermine the chances for success of this project in its next phase of review by the Secretary of EOEA." Laura responded that the Secretary wants the CAC's expertise and objective feedback in evaluating potential environmental impacts of the project and the proponent's plans for minimizing and mitigating damage to the environment.
- If the CAC also takes on additional tasks such as making the document clearer/stronger, etc., no problem unless the CAC does this to the exclusion of its primary function.
- Encourage CAC to write out comments regarding small edits, note the section and give to writers, rather than raising for group discussion.

III Review of Draft Comments - Project Alternatives

- Paul's recommendations in paragraph 2 seems consistent with the message from MEPA as to the focus of the CAC.
- After review, CAC suggested a small editing change under Flood Control, 2.1.5, substitute the word points for bullets.

IV Discussion - Project Impacts and Mitigation

Section 6: Assessment of Impact/Environmental Consequences

- Section 6.1, installation of new park benches - add "and waste barrels".
- Section 6.1, recommend assessment and evaluation of health of trees and shrubs in the area, with a focus on the potential removal of dead trees in the area.
- Section 6.1.1.3, first paragraph second sentence, clarify and reorder sentence.
- *General comment:* Repetition of sentences about fecal coliform count means you don't know which sections of the river are better or worse and which sections have a standard problem. If there is a reference to a table or appendix that has the information, include the reference.
- Section 6.1.2.1, last paragraph, add requirement of preparation of the soil, eg. aeration and tilling in advance of sodding and seeding and restoring landscape. Describe site preparation specific to each area.
- *General Comment*: Interested in the role of the contractor versus the city in managing new vegetation during interim period before vegetation is fully established. Describe two-year post planting maintenance plan. Discussion focused on the issue that a maintenance plan may be inadequate before vegetation is established; there may be a need for more care of the vegetation during the transition period.
- **Parking Lot::** Recommend process be put in place for site inspection and checking of vegetation prior to transfer from contractor to municipalities to ensure the vegetation is in good shape when the contract is done.
- Section 6.1.2.2, under Benthic Resources section, question assumptions regarding quality of benthic and other resources.
- Section 6.1.2.2, Benthic Resources section, bio-accumulation is preferred term for bio-magnification.
- Section 6.1.2.2, Benthic Resources section, what does this term mean: Recruitment from storm drain. Discussion about what could be recruited from a storm drain that might be desirable. Explain, give examples or delete.
- *General Comment:* All historic resources sections under Section 6, historic resources are not just built features but are also landscape features that are remaining, for example vegetation and grading.
- Section 6.1.3.1, include that the historic character has been compromised by the construction of the Bowker overpass, however, there are several historic features remaining, such as grading, significant trees and defined spatial relationships.

- Section 6.1.3.1, some sections refer to Charlesgate as having no historic resources, although there are references about historical resources in other parts of the chapter. Need to clear up inconsistencies about historical resources in the Charlegate area.
- Section 6.1.3.1, need to clarify the kind of protection fencing that will be used.
- Section 6.1.4, want reference to an explanation of construction traffic impacts, eg. an appendix reference and include clearer explanation of relative impact (quantitative and qualitative analysis) in this section.
- Section 6.2, bullet 3, restore the bank as constructed according to historic intent, instead of natural bank.
- Section 6.2.1.2, last sentence, need recommendation to address how to deal with Stony Brook conduit being a continuing source of contamination.
- Section 6.2.1.2, define analytes in glossary.
- Section 6.2.1.3, Staging Area Runoff, second sentence, substitute: crushed stone will minimize compaction, instead of leaving soil undisturbed, which is inaccurate.
- Section 6.2.1.3, Turbid Water section, Phragmites should be cut before flowering in (the previous) July as a first step before seeds come out. Also include statement that proper cultural practices should be followed in removing Phragmites.
- Section 6.2.2.1, p. 6-22, how is the loam ground going to be prepared for restoration? Similar to previous comment about aeration and tilling the soil.
- Section 6.2.2.2, wants validation that freshwater shellfish exist in the Fens.
- *General Comment*: need to reference validation or documentation in appendices that support statements throughout the draft EIR.
- Section 6.2.2.1, CAC want to see an indication of how mature historic trees and other historic features in the Fens bridge staging area will be protected during construction.
- Section 6.2. any plans for a bridge when the riverway in the Sears parking lot is daylighted?
- *General Comment:* Section 6, all traffic sections, want layman's description of traffic and noise impact of construction.
- Section 6.3.1.2, sediment quality section, concerned about limited reference to animal fecal matter. This is the first reference to this.
- Section 6.4.1, second to last paragraph, need to include more strategies for discouraging geese, in addition to the strategy of planting vegetation. Planting will be done consistent with historic intent. Planting alone may not solve the geese problem. **Parking Lot:** May need protective fencing until vegetation is established

- Section 6.4, include in bulleted list: stabilization of eroding island shores.
- Section 6.4.2.2 and 6.5.2.2, boiler plate language better suits down stream as opposed to upstream habitats. Character changes as you move upstream; regional accuracy required.
- Concerned about sequence of dredging and silt fences in terms of the impact on the river and fish. Is one sequence of dredging better than another sequence?
- Section 6.4.2.2, Wildlife Resources, wants more detail on the rodent population.
- Section 6.4.2.3, explain impact on Grebes under endangered and threatened species section. Why are Grebes not an issue?
- Section 6.4.2.5, first paragraph, make reference to work that needs to be done on other two existing islands.
- Section 6.4.3.3, want more explanation about design and impact of new softball field, particularly on historic resources, pedestrian and traffic impacts.
- Section 6.5.1.3, fourth paragraph, 6-84, why only BWSC for the catch basin improvement program in Willow Pond?
- Typo: repetition of word dredging

Section 7: Environmental Mitigation

- Section 7.0, p. 7-1, second sentence in second paragraph - need clarification on equal precedence.
- Section 7.2.6, who enforces work under Weekly Environmental Inspection Reports.
- *Writers:* please look at comments under section 6 and identify comments relating to mitigation that apply to section 7.
- Page 7-12, fourth bullet, number 3, re: water samples – three sources (field) are identified - where will the analysis of the other samples be done.

Section 9: Statutory and Regulatory Standards and Requirements

- Section 9.1.2, section 106, define what an undertaking is. It is a technical term (use info in earlier part of document).
- Section 9.1.2, this section should note that the Secretary of the Interior's standards are the benchmarks against which effects are evaluated.
- Section 9.1.2, the Mass Historic Commission is the SHPO not "would function as."
- P. 9-5, Delete last sentence in section 9.1.2 because it is not applicable.

- Section 9.2.1, in parentheses, correct spelling of man-made – not madmade!
- Section 9.2.1, second to last sentence in paragraph 2 regarding no historic elements at Charlesgate, contradicts earlier statements in Chapter 6 regarding historic features at Charlesgate.
- Table 9-1, and all similar tables in Section 9, revise "no effect on historic resources column" under section 106 – question about advisability because of course there is an effect. Either n/a or partially meets objective.

V Questions and Answers (General Public) & Wrap Up

There were no questions from the public.

Print Date: 05/16/01

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE
Review of Draft Environmental Impact Report

	Day	Date	Topic for Discussion	WRITERS	Review of Draft Comments	Location
1	Mon.	23-Apr-2001	*Vision Statement/Executive Summary*	***Frances Kemp, George Hagerty, Lauren Meier***	(none)	450 Dodge Hall, NU
2	Wed.	02-May-2001	*Project Alternatives* *Section 2*	***Paul Mentag***	(none)	440 Egan Center, NU
3	Mon.	07-May-2001	*Project Design/Preferred Alternative* *Section 5, Appendix I*	***Arlene Mattison, Eileen Woodford***	*Vision Statement/Executive Summary*	440 Egan Center, NU
4	Wed.	16-May-2001	*Project Impacts and Mitigation* *Sections 6, 7 and 9*	***Ed Cutler, Eileen Woodford,***	*Project Alternatives*	440 Egan Center, NU
5	Mon.	21-May-2001	*Best Management Practices* *Section 2.5 and 5.7*	***Fredericka Veikley, Kathy Baskin, Hugh Mattison, Ed Burke***	*Project Design/Preferred Alternative*	450 Dodge Hall, NU
6	Wed.	30-May-2001	*Maintenance and Management* *Section 8*	***Hugh Mattison, Suzanne Comtois***	*Project Impacts and Mitigation*	96 The Fenway, NU Faculty Lounge
7	Mon.	04-Jun-2001	*Funding* *Section 10*	***George Proakis, Fran Gershwin, Marion Sabal***	*Best Management Practices*	450 Dodge Hall, NU
8	Wed.	13-Jun-2001	*Miscellaneous* *-MDC* *- Public/Agency Involvement: Section 3 &Appendices K and L* *- Existing Conditions: Section 4 & Appendices B, C, D, E, F, G and H* *- Emerald Necklace Master Plan: Appendix A* *- Introduction: Section 1* *- Responses to ENF Comments: Appendix J* *- Other Issues Not Included in Above Topics*	***George Proakis, Isabella Callanan***	*Maintenance and Management*	96 The Fenway, NU Faculty Lounge
9	Wed.	20-Jun-2001	*Vision Statement – Revisit*	***Richard Heath, June Hatfield***	*Funding*	440 Egan Center, NU
10	Mon.	25-Jun-2001	*Open*	***Fran Gershwin, Gary Hilderbrand, Richard, Heath, Arleyn Levee***	*Miscellaneous / Finalize Comment Letter*	450 Dodge Hall, NU

Attachment 1

eting
16, 200

Sign-in Sheet

Name		Affiliation	Signature
athy	Baskin	Charles River Watershed Association	
harles Alan	Birnbaum	National Park Service	
dward	Burke	Restore Olmsted's Waterway Coalition	
sabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
uzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
dward	Cutler	Brookline Resident	Ed Cutler
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	Frances Allou Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
ances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	

Attachment 1

Emerald Necklace Citizens Advisory Committee
Meeting
May 16, 2001

Sign-In Shee

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren S Meier
Paul	Mentag	Fenway Alliance	
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	Marion Sabal
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

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Meeting
May 16, 2001

Sign-In Sheet

\Anf-cbo nts 1\MODR\Ex Off of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001 xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Amanda Griesbach	MODR	727-2224	
JANE WELLS	MODR	727-2224	
John Burckardt	PB/Boston Parks	617-635 4505 x 6517	jburckardt@ ci.boston.ma.us
Susan M. Jeghelian	MODR	727-2224	x 21194
TOM BRADY	TOWN OF BROOKLINE	730-2088	
Fran Beatty	BPRD	635-4505	
Kara Wilbur	Fort Point Assoc	357-7094	

Page ___ of ___

MEMORANDUM

DATE: May 15, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

PLEASE NOTE MEETING LOCATION!

Monday, May 21, 2001

Northeastern University

Dodge Hall, Room 450 (4th floor)

Huntington Avenue (off the main quadrangle, next to the YMCA and the Green Line Station)

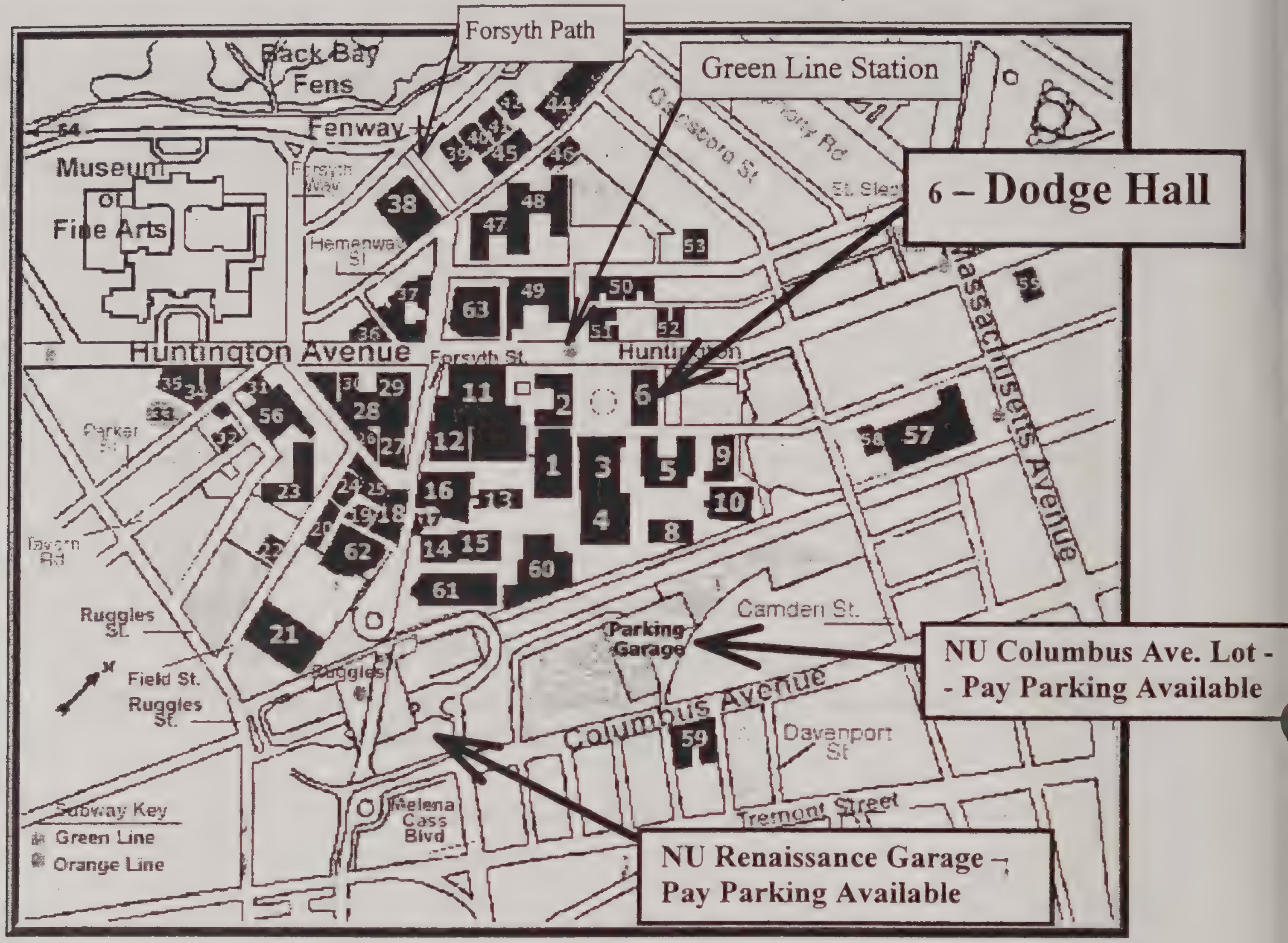
~ ~ ~ ~ ~ ~ See Map on Back! ~ ~ ~ ~ ~ ~

Agenda Topic: Draft Environmental Impact Report (DEIR) Review #5: Best Management Practices

5:45 p.m.	Refreshments
6:00 p.m.	Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to
Dodge Hall -- Room 450
NORTHEASTERN UNIVERSITY CAMPUS



From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to Huntington Avenue. Turn left on Huntington. Dodge Hall is on the main quad near the Green Line stop.

From Green Line (E Train):
Get off at Northeastern U. stop and walk across Huntington Avenue to the main quad. Dodge Hall is the building on the left as you enter the main quad.

From the Orange Line:
Exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

From the Parking Garages:
Columbus Ave. Garage: Cross the tracks on the footbridge and continue walking to the main quadrangle. Dodge Hall is to your right.
Renaissance Garage: walk through Ruggles MBTA Station and exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Dodge Hall

Room 450 – 4th Floor

Monday, May 21, 2001
6:00p.m. - 8:30p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:15

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
*John Burckardt, **P. E**, Project Manager*

II. **Process Issues/Organization** 6:15 - 6:30

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

Notice of Project Change
Fran Beatty, ASLA, Senior Landscape Architect for Historical Parks
Boston Parks and Recreation Department

III. **Review of Draft Comments: Project Design/Preferred Alternative** 6:30 – 7:00

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

IV. **Discussion of Best Management Practices** 7:00 – 8:20

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

V. **Questions and Answers (General Public) Wrap Up** 8:20 – 8:30

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Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – May 21, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

- Samantha Overton Bussell from MDC and Amy Schofield from BWSC will observe and answer any questions on their agencies' role in BMPs.

- Memo from Isabella Callanan indicates that there is a problem with mountain bikes in the park and more aggressive signage is required to control bike traffic.

- Dudley Bonsal sitting in for Kathy Baskin, who is a writer for this section.

II Process Issues/Organization

- When going through the DEIR in chronological order, the CAC also needs to get a global perspective for general comments. The CAC needs to ask: What is right? What is wrong? What is missing? We need to add this step after each topic is discussed.

Notice of Project Change – Regarding CAC Review of the "filing" Draft Environmental Impact Report (DEIR)
Fran Beatty, ASLA, Senior Landscape Architect for Historical Parks, Boston Parks and Recreation Dept.

Fran Beatty explained that the proponents are proposing to file a "Notice of Project Change" to waive the 30-day CAC review period that, under the MEPA regulations, precedes the filing to the Secretary of Environmental Affairs.

The proponents are concerned about pushing out the Charlesgate portion of the project and FEMA, which is providing the federal funding for Charlesgate, has expressed concern over the delay in the start of this work.

The attached chart shows the normal review cycle under MEPA at the top and the proposed change at the bottom.

Under MEPA regulations, the CAC has 30 days of review prior to filing with the Secretary. At the end of these 30 days, the CAC's comment letter may be attached to the DEIR. However, there are no changes made to the DEIR and the Secretary and the public review the same version of the DEIR that the CAC reviewed.

The changes proposed by the proponent include:

- A 60-day "pre-filing" review by the CAC (which is occurring now between April 23, 2001 and June 25, 2001). This allows for the proponents to include CAC comments and revise the DEIR prior to filing with the Secretary. (This "pre-filing" review is not required under MEPA regulations, but, due to the complexity of the project and extensiveness of the DEIR, the proponents have offered this opportunity to the CAC.)
- Review of the "filing" DEIR: Instead of providing 30 days prior to filing with the Secretary (and 30 days after the filing), the proponents propose a 60-day combined period when the Secretary, CAC and public will review the DEIR. The CAC would review the "filing" DEIR simultaneously with the review by the Secretary and the public.
- The CAC's comment letter to the proponents from the current "pre-filing" review will be attached to the DEIR submitted to the Secretary.

The following would not change:

- The CAC would still write its comment letter to the Secretary representing the consensus of the committee.
- Individual members of the CAC would have the opportunity to write their own letters (or letters representing their consistencies) to the Secretary.

CAC Discussion

The CAC discussed the proposed Notice Project Change and concern was expressed that the filing DEIR may not adequately represent the CAC's input. CAC members are concerned that they would not get to review the filing draft again before it was filed with the Secretary in order to see if their comments were adequately addressed. The CAC wants to know how the CAC's comments are being absorbed by the proponents before DEIR is submitted to the Secretary.

Fran explained that the proposal for a Notice of Project Change was being presented for discussion, but not decision, at tonight's meeting. The proposed change will also be on next week's meeting agenda.

III Review of Draft Comments – Project Description

- Rearranged order of comments, putting the general comments first and the specific comments after.

- Deleted sentence under 5.7, Best Management Practices, which will be discussed tonight (5/21/01).

IV Discussion

- Section 2.5, p. 2-84, 2nd bullet needs to be more specific, by adding, improve water quality in the Muddy River to a Class B level, thereby also contributing to the improvement of water quality in the Charles River.

- Section 2.5, p. 2-84, CAC suggests adding another bullet before 5th bullet, contribute to fishing and recreational uses in the Muddy River.

- *General Comment,* Section 2.5, reference made to section 5.6, should be 5.7. Check any other references in this section.

- Section 2.5, goal of the project is to reduce sediment loads by another 30%. Request further information from the engineers to better understand the implications of asking for greater reductions of sediment loads. Suggest making reference to Olmsted's master plan and original design.

- Add further explanation of the actual physical changes needed to achieve the 30% and support for arriving at this figure.

- Section 2.5.1, table 2-2, request more current data than 1990 reference to illegal connections.

- Section 2.5.1, table 2-2, should mention geese, as well as dogs.

- Table 2-2, should provide complete explanation of NPDES in a footnote.

- Table 2-2, clarify that ft. ^{2} = square ft.

- Table 2-2, third bullet, clarify that T symbol is a computer error and should be numbered.

- Table 2-2, third bullet, add a description of how private parking compliance is maintained.

- Table 2-2, last sentence, include summary of the findings from the final report.

- Table 2-2, p 2 of 6, street sweeping notes misrepresent current sweeping practices. Clarify.

- *General comment* on Table 2-2, CAC wants table to be clearer. In addition to city/town and proponent responsibilities, also include and identify practices that apply specifically to Muddy River either in another column or separate table. E.g. Currently street sweeping in Fenway is resident driven rather than done on a regular basis. Street sweeping should be required and added to the recommendations. Request analysis of what BMP practices are being implemented/not implemented, either in a narrative or separate chart.

- Table 2-2, (page 2 of 6) clarify what actions will be taken to about oil leaking from the former Brookline PW building.

- Figure 2-40, page 2-93. The pie chart is significant because it clearly shows that the three largest pie sections fall under BMP and maintenance. **Recommendation that this point be stressed and that the pie chart be included in the Executive Summary.**

- Section 2.5.2, page 2-92, typical urban runoff should be a bullet.

- Section 2.5.2.1, add funding source.

- Section 2.5.2.1, recommend that the MDC break down budgets specifically for catch basin cleaning in the Charles River area.

- Section 2.5.2.1, last paragraph, inaccurate explanation of law. Need to revise. Recommendations need to be included in **parking lot** section.

- *General Comment*, need to raise issues of future maintenance and funding under multiple jurisdictions **parking lot** sections.

- Section 2.5.2.5, 2-97, suggest increasing frequency of collection and number of collection sites and recommend institutional parking lots adjacent to the parks for possible collection sites.

- Section 2.5.2.4, most of the illicit collections, most should be quantified.

- Section 2.5.2.6, first and second bullet, why MDC and not proponents. Third bullet, question the accuracy of the statement. Clarify.

- Section 2.5.2.6, concerned about compost leaching into the Muddy River. Suggest that composting be located upland and removed in the fall.

- Section 2.5.2.7 – typo in second last sentence on page 2-97, "very" should be "every"

- Section 2.5.2.7, p 2-98, what streets in the watershed are included? Need to be more specific.

- Section 2.5.2.6, under regular trail maintenance, what efforts are being made to discourage dirt bike trails.

- Section 2.5.2.8, last sentence, change "investigating" to "developing" alternative methods.

- Section 2.5.2.9, explain why there needs to be a designated feeding area and provide more specifics on by-laws and who will provide enforcement of pooper scooper laws.

- Section 2.5.2.10, Clarify and quantify the proposed tax incentives.

- Section 2.5.2.11, fifth bullet, change "would provide a method", to "will provide."

- Section 2.5.2.11, change "which should be incorporated", to "which will be."

- Section specifics on who is doing water quality testing and with what money.

- Section 2.5.3, need to include maintenance details of evaluating various BMPs.

- Section 2.5.2.11, P. 2-100, suggest of an additional bullet to keep oil runoff from streets out of the river in Boston and Brookline, including oil separators.

- *General Comment*, wherever eroded banks are referenced also include eroded paths.

- Section 2.5.4, last sentence on page 2-105 should be more specific. Add consistent with recommendations in Sections 5.

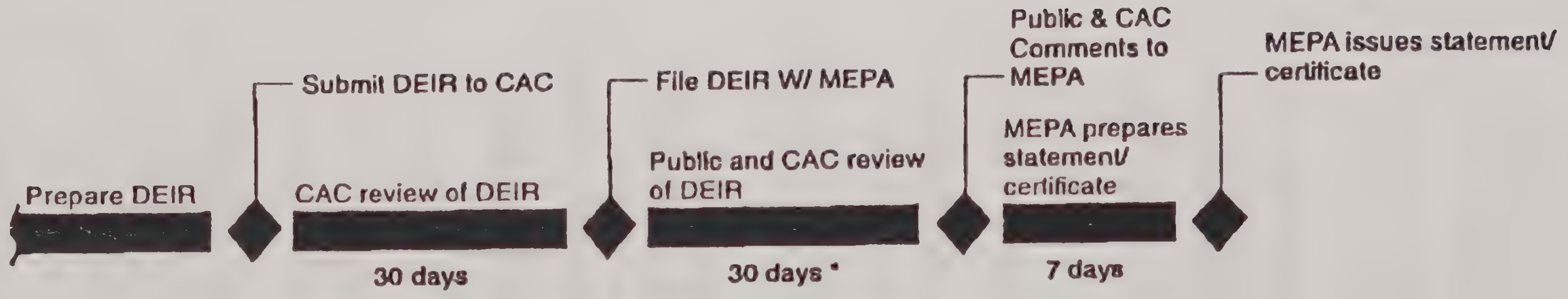
- *General Comment*, need to be clearer about which practices are currently implemented and which are possible alternatives. Need to be clear that this section is a laundry list and not recommendations. There needs to be a differentiation between Best Management Practices and maintenance practices.

- Section 2.5.3, p 2-101, last paragraph, the scope of the Center for Watershed Protection Study should be broader. VB study may be too specific.

V Questions and Answers (General Public) & Wrap Up

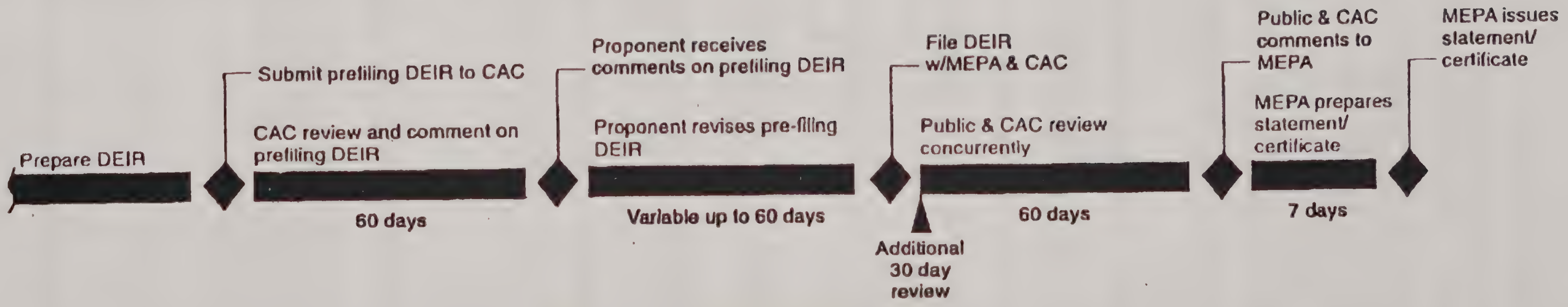
- Secretary is looking for a pathway for protecting the resource of the Muddy River. CAC can help the Secretary convince the national government and other entities to fund this project. The Secretary is not interested in speed, but is interested in advice.

Typical MEPA Review Schedule


Prepare DEIR
Submit DEIR to CAC
CAC review of DEIR
30 days
File DEIR W/ MEPA
Public and CAC review of DEIR
30 days *
Public & CAC Comments to MEPA
MEPA prepares statement/ certificate
7 days
MEPA issues statement/ certificate

* possible extension to 60 days

Proposed Muddy River MEPA Review Schedule


Prepare DEIR
Submit prefiling DEIR to CAC
CAC review and comment on prefiling DEIR
60 days
Proponent receives comments on prefiling DEIR
Proponent revises pre-filing DEIR
Variable up to 60 days
File DEIR w/MEPA & CAC
Public & CAC review concurrently
60 days
Additional 30 day review
Public & CAC comments to MEPA
MEPA prepares statement/ certificate
7 days
MEPA issues statement/ certificate

Attachment 1

Meeting

May 21 01

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	Dudley B. Bonsal Dudley Bonsal dbonsal@crwa.org
Charles Alan	Birnbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
dward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
ances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	[illegible]

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

May 21-01

Sign In She

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	A Levee
Arlene	Mattison	Emerald Necklace Conservancy	A Mattson
Hugh	Mattison	Friends of Leverett Pond	
Lauren	Meier		
Paul	Mentag	Fenway Alliance	Paul J Mentag
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	Marion Sabal
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

\\Anf-cbo.nts.1\MODR\Ex.Off. of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001.xls]CAC Members

Emerald Necklace Citizens Advisory Committee

Meeting

May 21-01

Sign-In Sheet

\\Anf-cbo nts 1\MODR\Ex.Off. of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001 xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
John Burckardt	PB c/o Bos Parks	617-635 4505 x 6517	jburckardt@ ci.boston.ma.us
Amanda Griesbach	MODR		amanda.griesbach@ state.ma.us.
Claire Flury	Fenway Garden Soc	617-266-4164 95 Park Dr.	
Amy Schofield	Boston Water & Sewer	989-7000	schofieldam@bwsc.org
Betsy Shure Gross	EOEA	617 626-1117	
Thomas Brady	Brookline	617-730-2145	tom_brady@town.brookline.ma.
Ann Overton Bussell	MDC	617 727 3227 x503	
Fran Beatty	Boston Parks →	635-4505	
Kara Wilkin	Fort Point Associates	617-357-7044	

MEMORANDUM

DATE: May 22, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Meeting Notice

Wednesday, May 30, 2001

Kerr Hall,
96 The Fenway
Northeastern University Faculty Center

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topics: Continuation of Discussion from May 21st Meeting:
Best Management Practices (BMPs)

Draft Environmental Impact Report (DEIR) Review #6:
Management & Maintenance Plan

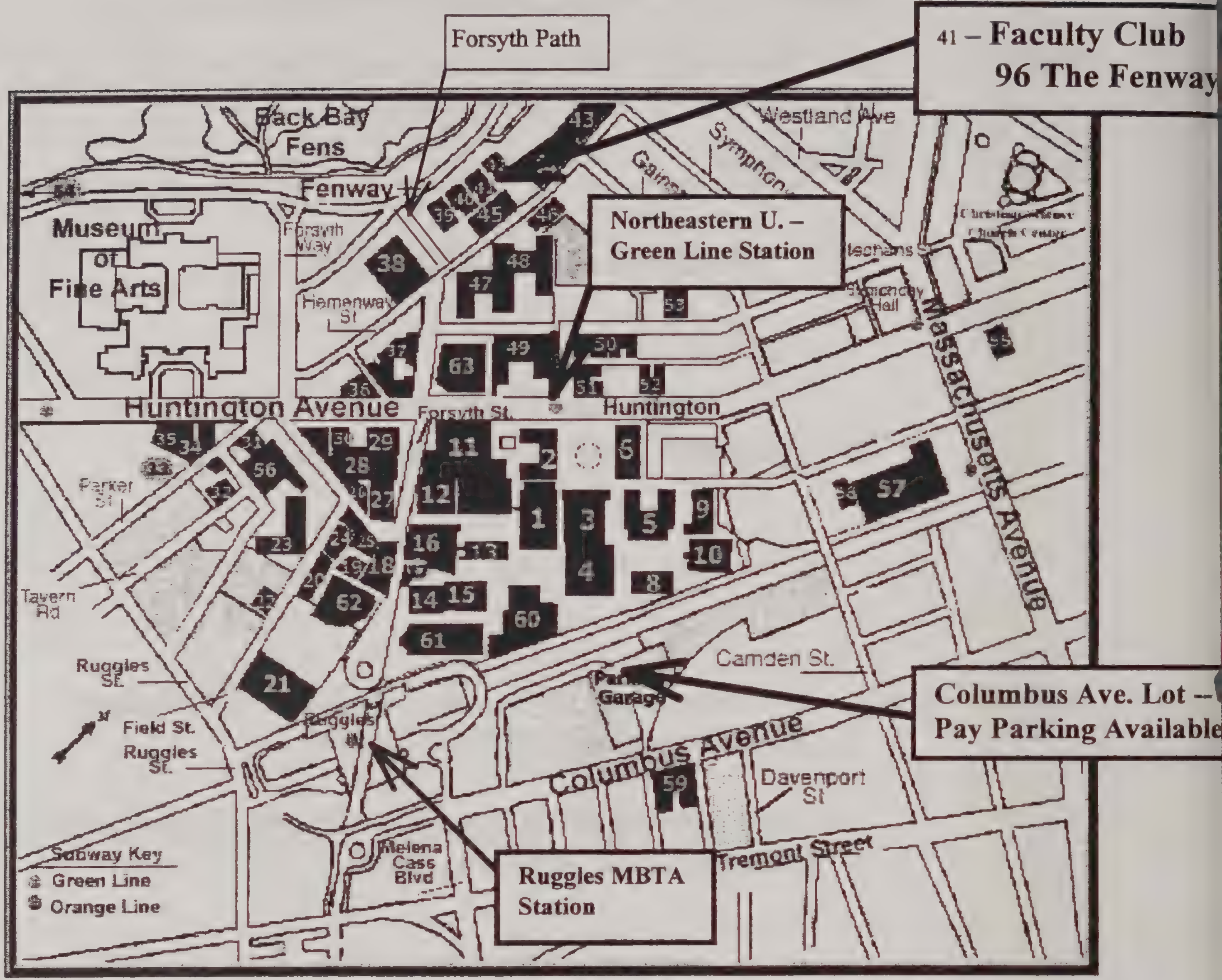
5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Please note the Red Sox will be playing the NY Yankees that evening at Fenway Park. Traffic will be heavy, parking will be scarce, and the MBTA will be crowded. Please leave extra time in order to arrive on time!

Directions to
Northeastern University Faculty Club
Kerr Hall, 96 The Fenway

NORTHEASTERN UNIVERSITY CAMPUS



Forsyth Path

41 – Faculty Club
96 The Fenway

Northeastern U. –
Green Line Station

Columbus Ave. Lot --
Pay Parking Available

Ruggles MBTA
Station

From The Fenway (walking):
The Faculty Club is at 96 The Fenway, between Westland Avenue and the Museum of Fine Arts.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Right on Forsyth St. and walk to end. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Orange Line:
Exit at Ruggles Station. Use the Forsyth Street exit. Walk 2 blocks, cross Huntington Avenue (traffic light) and continue one more block. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Parking Garage:
Cross the tracks using the concourse through Ruggles MBTA station. Next, follow direction (above) from Ruggles Station to the Faculty Club at 96 The Fenway.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Kerr Hall

Faculty Center

Wednesday, May 30, 2001
6:00p.m. - 8:30p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
John Burckardt, ***P. E****, Project Manager*

II. **Process Issues/Organization** 6:15 - 6:30

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Notice of Project Change – CAC decision

III. **Review of Draft Comments: Project Impacts and Mitigation** 6:30 – 6:45

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

IV. **Discussion of Best Management Practices (Section 5.7)** 6:45 – 7:15

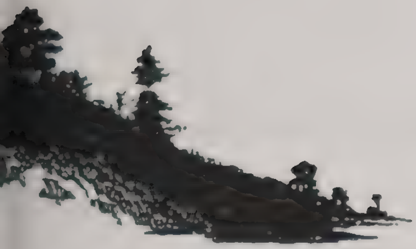
Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

V. **Discussion of Management Practices and Maintenance** 7:15 – 8:20

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Presentation by Hugh Mattison
Richard Heath's comments
Updates on Current Practices
CAC Discussion of Section 8

VI. **Questions and Answers (General Public) Wrap Up** 8:20 – 8:30



RICHARD HEATH
Landscape Historian
42 Bourne Street • Jamaica Plain, Massachusetts 02130 • 617.522.7431

MAINTENANCE -MANAGEMENT COMMENTS

Section Five. Page 5- 60

The Victory Gardens are both an integral part of the Back Bay Fens and under the jurisdiction of the Boston Parks Dept. Parks Department policy must state that no pesticide or fertilizers will be used near waterbodies of any park in the Necklace. Both municipal proponents must introduce and monitor integrated pest management in the Emerald Necklace.

Source Control of Best Management Practices.

Second paragraph.
* Elimination of desire lines is required to make certain that pedestrians stay on the footpaths (they are *not* trails.).

* Temporary fencing will be required from 3 to 5 years to protect all watercourse plantings, to promote the growth of tall vegetation, to stop erosion and to create new patterns of use.

* Correction of desire lines will begin in the spring of 2002 with annual footpath maintenance including revegetation (when required).

* Design and repair of improper parkway curb settings must begin no later than 2002. [Note these are not MDC curb cuts. They are parkway curbs; the parkways are an integral part of the Emerald Necklace and this must be made clearer throughout the whole DEIR.]

* The design and construction of particle separators along Park Drive, The Fenway and Agassiz Road are the mandated responsibility of the MDC and this work must begin in 2003. . .

Fourth paragraph.
* Boston must develop a new street sweeping program that includes frequency and alternative resident parking during regular sweeps . This work should be implemented in the fall of 2002.

Page 5 - 62.

*The MDC must improve their catch basin cleaning programs from The Fenway to the Arborway. The MDC must submit to the proponents, to EOEA and to the CAC a workable maintenance plan complete with personnel, equipment and budget for Emerald Necklace parkway maintenance.

* The MDC is responsible for correction of all curb settings. the MDC must evaluate and repair the curbing along The Fenway and The Riverway, work to be completed no later than 2003.

Page 5- 63.

Willow Pond. The footpaths around Ward's Pond must be rebuilt and stabilized to prevent further erosion into the Pond and hence into Muddy river. The severe washes on two sides of Nickerson hill must be repaired, replanted and fenced for a minimum of five years. This includes the stone steps. This work must begin no later than 2002. It will be a City of Boston capital project.

Page 5- 66

Single element costs.

1. Must cost to the MDC of curbs and catchbasin construction.

2. Must include costs to the City of Boston for construction at Ward's Pond of footpaths and erosion control at Nickerson Hill.

3. There must be a cost estimate for a clerk of the works for this huge capital project. This should be funded by the Boston Parks Department and be an additional staff to the chief engineer. There is only one chief engineer for the entire Boston Parks Department; it will be impossible for the Parks Dept. to monitor the Charlesgate phase without additional full time staff. There will be significant benefits in quality control, atention to detail and cost savings with a Parks Dept. engineer on day to day construction coordination and management of the Muddy River project. This is a real cost and it seems to have been overlooked.

Section 5.7.8. page 5- 64

Enforcement.
Requires a total rewrite to emphasize the fact that a $91 million capital project for less than 200 acres of parkland requires more than just an MOA and regular meetings.

This section must lead with this:

The responsibility for enforcement and monitoring rests on the project proponents. Municipalities allot large sums of money to design and build, but fail to provide and budget for operation and maintenance.
Operations costs can range from 3% to 10% of the construction costs. At the current budget for the Muddy River , annual maintenance and operations of the six parks of the Emerald Necklace should cost between $2. 7 to $9.1 million
The first annual update report will include a management plan for single management administration of the Emerald Necklace that includes administrative and maintenance personnel, their job descriptions and a full budget broken down by the line item for each job. This will be based upon research of present day practices and costs for land management and historic natural resource management of which there are many examples in the Commonwealth and New England. Approval of the next phases of work will depend upon the acceptance of this workable plan by the secretary of EOEA.

SECTION EIGHT
PAGE 8-4 / MAINTENANCE MANAGEMENT

This section must be rethought and rewritten. There is a long list of what to do and how to do it, but nothing on who will do this work and the skill level of full time personnel required.
A full year of intense thought and research was devoted to the capital project. It is only right to expect an equal amount of time to determine how the parks will be managed after the work is completed.

First and foremost, this section does not explain how much it will cost to maintain the work that is painstakingly described and budgeted in the preceding seven sections. We know to the penny the cost to build it, we don't know the cost to annually maintain it. We must.

Second, the personnel figures are not backed up with documentation and research to show how the numbers and descriptions were arrived at in the first place. There are no personnel and equipment figures for the parkways at all. Personnel must include an expanded landscape architecture division complete with natural systems specialists and capital project managers. The Prospect Park administrators office designs and manages capital projects in-house.

Third. This section describes tree work, but does not include a tree crew, both removal and planting and the associated annual costs.

Fourth this section does not explain that the three affected parks of the DEIR are but one third of a much larger, integrated park system that must be managed as a whole. Controlling erosion, sedimentation, eliminating pesticides, desire lines and invasive species, removing dead trees and replanting trees are also issues at Franklin Park and Jamaica Park.

Section Eight should begin in this way:

The Executive Office of Environmental Affairs is a party to the management of the Emerald Necklace in two ways: first because one of the three managing agencies of the Necklace is a subordinate division of EOEA; second because EOEA demands an annual report on how the Emerald Necklace work that it has or will permit is being maintained.

No certificate will be issued until a workable management plan has been submitted to EOEA with budget line items for administrative staff, skilled and unskilled staff and equipment for a dedicated Emerald Necklace Park Division. Just as the Cemetery Division has its own crew, machinery and office separate from the rest of Boston Parks maintenance, so will the Emerald Necklace have its own separate administration. The certificate will depend on one being created.

Within one year of the release of the DEIR- that is, in March, 2002 - the proponents will submit a workable plan for an integrated Emerald Necklace administration with one manager and one fully staffed management and maintenance office . This will include the seamless integration of the parkways into this single management entity. The proponents with full CAC participation will analyze the feasibility of how this office is created and funded . These should include:

1. Legislation. The 1875 Boston Parks Dept. legislation is amended creating a special Emerald Necklace administration.

2. The 1956 legislation transferring the parkways to the MDC is revoked and the parkways revert back to Boston with a line item subsidy similar to that given each year to Zoo New England.

3. An MOA in which Brookline grants Boston rights to enter, manage and maintain its sections of the Emerald Necklace.

4. Non profit management. This is not new territory, but Boston seems to resist adapting even a portion of it. It is not enough for corporations and the public to simply write checks to the Boston Parks Dept. for the Emerald Necklace.
I favor this because I mean a completely new management entity free of public sector restraints. I mean an entity that has the full attention of the public. There are twenty years of hard earned experience in Prospect Park and Central Park on how a public private park administration works. Both parks have separate maintenance staff levels of a highly specialized professional corps that Boston needs.

5. Funding of the Emerald necklace administrators office will be analyzed and recommendations made.
*One example is that the income from Parkman Fund for the next 50 years is devoted entirely to the Emerald Necklace.

*Another example is 3 % of all parking ticket revenues is devoted to the Emerald Necklace.

With the majority of the CAC in approval, the Secretary will make a determination of the preferred method of creating for the first time in its history, a single management entity for all six parks of the Emerald Necklace and their connecting parkways.

The Federal government- to which the proponents are looking to pay for this work - will be more willing to contribute if they see how determined the City of Boston is in fulfilling its responsibilities to maintain the work after it is completed.

It makes no sense to aim for a 30% increase in the length of time required before the River needs to be dredged again. Common, elementary school sense tells me that the best maintenance practices and staffing levels will prolong this work for a century.

The DEIR must explain maintenance- management in more detail.

E-Mail Message

From: fveikley@caregroup.harvard.edu
Sent: Tuesday, May 29, 2001 7:58 PM
To: jburckardt@ci.boston.ma.us
Cc: edburke2@gis.net
Subject: BMP Comments

John,

Here are comments on BMP's.

Freddie Veikley

<<BMP Comments.doc>>

BMP Comments.doc

Best Management Practices

The reading and discussion about Best Management Practices has left this reader with the impression the job is not yet done, especially with regard to BMPs that will need to be assumed by the City of Boston and the Metropolitan District Commission in order to assure the public funds for water quality especially will not be wasted. One of the reasons for the weakness may be that the Boston proponent for the project is the Boston Parks and Recreation Department, while much of the success of BMPs will depend upon other agencies within the City such as Boston Transportation Department and Public Works. Because the proponent must rely on the good will or assurances of other departments, the strength of the proponents' authority is compromised. The same is true of both proponents' need to rely on the MDC for vigorous implementation of prescribed BMPs. The MOU discussed later

Much of the information one seeks for assurances that BMPs will be in place so that the expensive dredging and restoration will not be short-lived is scattered in different sections of the DEIR. Although the BMPs which must be developed and implemented are inter-related among several jurisdictions, causes, practices, and solutions discussed in other sections (2, 5, and 8) and are contingent upon data not yet finalized, there does not seem to be a clear explanation of how they will work, when they will be implemented, what they will cost and how they will be paid for.

I am sure the following chart may be overly simplistic, but I would like to be able to see this kind of information in one place:

Water Quality BMPs

Problem/ Pollutant	Known Sources	Responsible Jurisdiction/ Agency	Proposed Remediation	Structural or non	Estimated New Annual Cost	How Funded	When Implemented
Oil							
Storage tanks							
Roadways							
Sediment							
Storm drains							
Path/Bank erosion							
Nutrient							
Sewerage							
Animal Waste							
Leaves							
Fertilizer							
Salt/De-icing chems.							
Heavy Metals							
Water flow							
Other							

A similar arrangement of information could be assembled for park maintenance:

Park Restoration Maintenance and Management

Problem Area	Jurisdiction/Agency	Remediation	Additional Cost	How Funded
Bank/Path Stabilization				
Plant maintenance				
Invasive Species				
Structural Maintenance				
Day-to-day Maintenance				

Other Items which I believe should be addressed (some are already in meeting notes):

1. The need to *require* a regular and thorough street sweeping program in Fenway neighborhoods and watershed area

2. The need to look at how to prevent property owners from dumping parking lot and sidewalk sand into catch basins

3. Will oil separators be used in Boston and MDC catch basins? Are they being used in all of Brookline catch basins?

4. Information about gross particle separators – How they work and how maintenance in private land is enforced

5 How the information from Brookline's sand/de-icing Pilot Plan can be controlled given the use of private contractors

6. Over-use of sand in Back Bay Fens paths a direct problem

7. I do not recall any leaves removed from the area between the Fenway and Park Drive (near Emmanuel) in year 2000 except when the Jug Handle was shoveled by in-mates in March (and much of the leaves were heaved into the water) Who should be working this area?

8. Victory Gardens compost piles are a cause of nutrient and other runoff into Muddy River which must be regulated.

Emerald Necklace Citizens Advisory Committee (CAC) Summary Notes – May 30, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

- Two handouts distributed by John: Comments on BMPs from Freddie Veikley & Maintenance/Management comments from Richard Heath.

II Process Issues/Organization

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Notice of Project Change – CAC Decision

- The CAC agreed to defer the discussion of this matter until the end of the meeting. At 8:15, the CAC returned to this discussion and Fran Beatty again explained the proposal for Notice of Project Change. The goal of the project change is to streamline the process, which would have the advantage of expediting phase 1. Phase 1 is related to the rest of the project and therefore cannot be separated from the rest of the EIR. FEMA wants to see visible progress on public review of DEIR.

- CAC requested a calendar that shows dates for the proposed project change. Fran indicated that the CAC has a schedule that goes through the end of June. The CAC letter is scheduled to be submitted to proponents at the beginning of July. The changes and the printing of the revised DEIR document would take place in August. The revised draft would be completed and filed by Labor Day with 60 days to follow for public and CAC review.

- The CAC asked that an e-mail be sent to all CAC members about the Project Change so they can vote by email or phone. The email should detail the two options and include a calendar of dates.

- CAC suggest that June 20th be set aside to revisit "Vision."

III Review of Draft Comments – Project Impacts & Mitigation

- CAC discussed Ed's preface from the summary, which generated discussion about Notice of Project Change and other previous discussions.
- Laura Rome of MEPA – Comments made to Secretary will highlight areas where CAC disagree with proponents, as well as areas where CAC agrees. The Secretary will be particularly interested in points of disagreement that are so great that the project can't move forward. If other points of disagreement are not so significant, the project will move forward.
- Can CAC receive a list of the comments that are not incorporated into DEIR?

  - Fran Beatty stated that some comments will have to be taken back to city departments but these comments can be bundles together for CAC at the end of the review process.

IV Discussion of Best Management Practices

- Re: Freddie's comments on handout – a discussion emphasized the concern about who is going to do what, when and with what money? (See chart in Freddie's handout).
- Section 5.7.1, second bullet – This section needs to be re-worded.
- Section 5.7.1, first bullet – water quality samples should be taken more frequently than annually and should be consistent with the frequency of sampling described in section 8. Samples should be taken from the same sites so that future comparisons can be made. References should be made to relevant parts of Section 8.
- Section 5.7.1, third bullet – Who is going to coordinate information for the amount of de-icing products and how will these be implemented?
- **General Comment** – Instead of stating owners should, document should state it is necessary for owners to….. Language needs to be strengthened. References should be made to sections that describe how these recommendations will be enforced.
- **General Comment** - Section 8 reflects the CAC's desire for more specifics.

- CAC wants a commitment in the document from the City of Boston and Town of Brookline. For example, they will do what, with what budget?

- Information about BMPs anticipated costs for future years should be provided by City of Boston and Town of Brookline.

- DEIR should include both BMP capital improvements and BMP maintenance costs in the budget. See Section 8.11.3, page 8-40 for BMP cost chart (this chart is not adequate).

- Bruce Conklin – If department has sufficient staff and resources, it was assumed that there will be no additional costs and therefore the costs were not broken down in DEIR. If departments did not have sufficient staff, equipment or maintenance, then the increased costs for these needed resources were identified in DEIR. CAC questioned this assumption.

- Discussion on scope/boundaries of project will be further discussed under Funding Section.

- Comment from Laura Rome of MEPA, Secretaries Office – Project extends beyond boundaries of the river to include the historical landscape.

- Public Education – CAC would like to see descriptive boards and signage describing the project and types of equipment used in restoration. *PARKING LOT.*

- **General Comment** – CAC would like to see a visual included, showing project boundaries with shaded and unshaded areas.

- Section 5.7.1, first bullet on P. 5-59 – How will this be addressed beyond the boundaries of the project.

- Section 5.7.2 - Discussion about pilot program and particle separators and questions to Bruce Conklin (CDM). Money is available for four additional particle separators if needed.

- Section 5.7.3 – What current BMPs exist in the Charlesgate area?

- Section 5.7.3, p. 5-59, last sentence – Add repair, along with street sweeping and catch basin cleaning.

- Section 5.7.4.1, first paragraph - compost, term should be changed to yard waste/plant waste/garden waste, and it should be removed more frequently.

- Section 5.7.4.1 – Victory Gardens are a private entity who will need to enforce pesticide control. The Parks Department does have jurisdiction over the Garden Society. Fran noted they have discussion each year with the Victory Gardens. Public education should be coordination with the Victory Gardens (PARKING LOT).

- Section 5.7.42, Table 5-7 – Victory Garden dredging volumes seem high. Bruce Conklin (CDM) is going check the levels referenced in the table.
- **General Comment** – Are there any BMPs related to the West Nile Virus in Willow Pond?
- CAC is concerned about MDC's ability to maintain parkways and their need for funding (**Parking Lot** to address the need for MDC funding).
- John reports that Samantha Overton Bussell is prepared to implement catch basin improvements.
- **General Comments** – How will eroded upland slopes located beyond the project boundary be addressed?
- Section 8 – How will park maintenance be enforced in the future without citizen oversight? Questions about how often CAC will meet, etc.
- Section 5.7.8 – need to reword last sentence in first paragraph, their dogs instead of themselves.
- Section 5.7.8, first and forth paragraph – CAC would like to know what enforcement will be provided if BMP practices are not maintained.
- Section 5.7.8, third paragraph – suggest that the last sentence does not belong here, not "fail to provide budget…". What steps are they taking to provide budget for operation and maintenance costs?
- Section 5.7.8, first bullet – clarify what annually means, e.g. quarterly sampling? Consistency with other sections needed.

V Discussion of Management Practices & Maintenance

- This section will be discussed at the next meeting.
- Fran Beatty asked CAC whether they would still like to have a presentation on Maintenance. CAC responded they would like to have representatives at meeting to answer questions.

VI Questions and Answers (General Public) & Wrap Up

No comments were made by the General Public.

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

May 30, 2001

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	Kathy Baskin
Charles Alan	Birnbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	Ed Burke
Isabella M.	Callanan	Friends of the Muddy River	
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	Ed Cutler (lim)
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J Kemp

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

May 30, 2001

Sign-In She

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	A A Levee
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		
Paul	Mentag	Fenway Alliance	
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	

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Emerald Necklace Citizens Advisory Committee

Meeting

May 30, 2001

Sign-In Sheet

\\Anf-cbo.nts.1\MODR\Ex.Off. of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
essica Belcher	BWSC	617 989 7000	
Amy Schofield	Boston Water & Sewer	617-989-7000	
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Jane [illegible]	MoDR	617 727-2224x21172	
Laura Rome	EOEA/MEPA	617-626-1030	laura.rome@state.ma.us
PATRICE KISH	DEM	617-626-1378	~~#~~ patrice.kish@state.ma.US
Anne S. Covert		617-738-0107	
John F. Burckardt	PS c/o Boston Parks	617-635-4505x6517	jburckardt@ci.boston.ma.us
TOM BRADY	TOWN OF BROOKLINE	617-730-2148	tom_brady@town.brookline.ma.us
Fran Beatty	Bos. Parks	617·635·4505	beatty@ci.boston.ma.US
Kathy Baskin	CRWA	617-965-5975 x 228	kbaskin@crwa.org
Erin Chute	Brookline Parks & OS	617·730·2088	erin_chute@town.brookline.ma.us
ave Langseth	Northeastern Univ	617·373-3992	langseth@coe.neu.edu
Kara Wilbur	Fort Point Ass.	617 357 7044	

MEMORANDUM

DATE: May 29, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

PLEASE NOTE MEETING LOCATION!

Monday, June 4, 2001
Northeastern University
Dodge Hall, Room 450 (4th floor)
Huntington Avenue (off the main quadrangle, next to the YMCA and the Green Line Station)

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

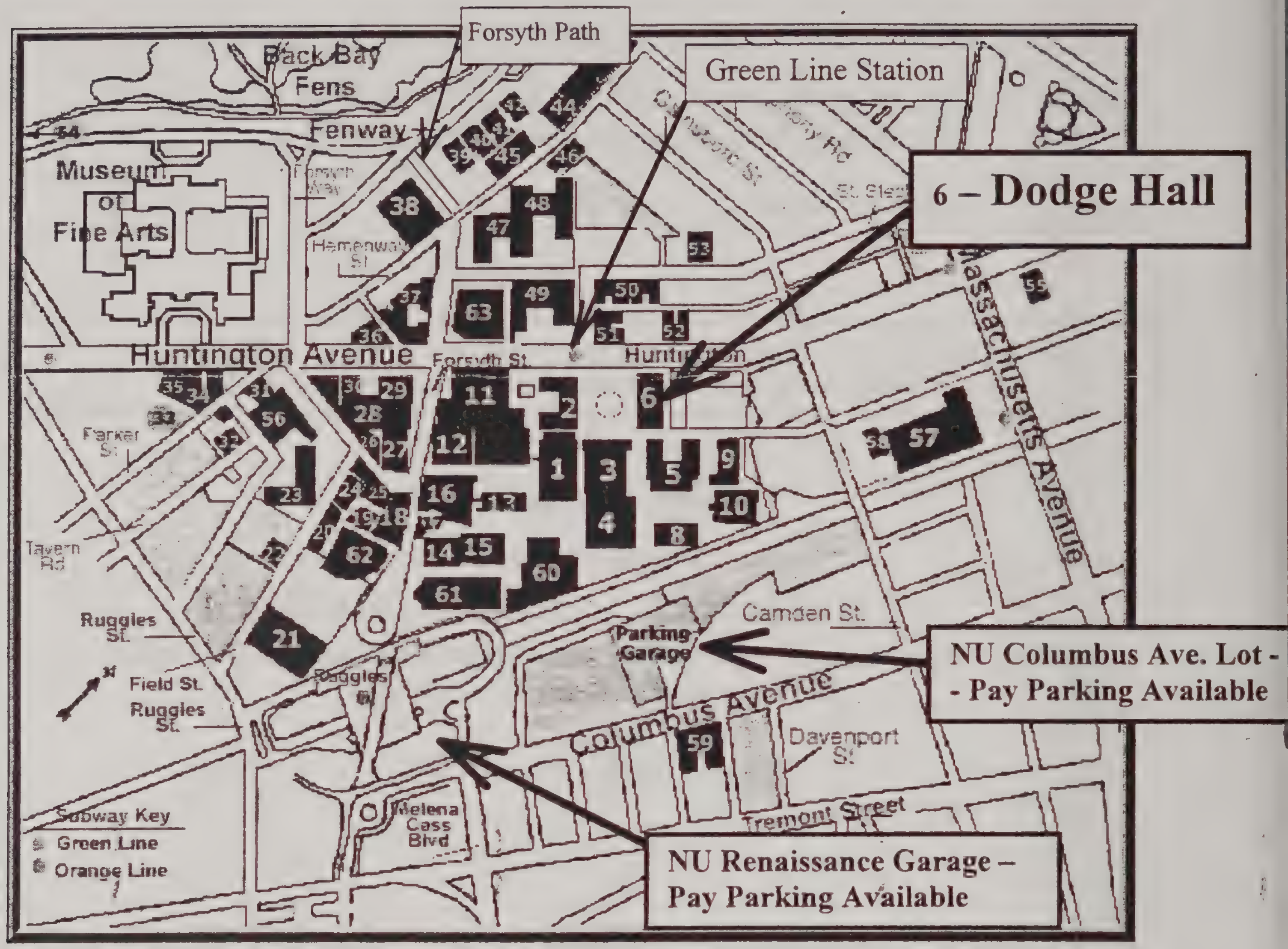
Agenda Topics: Draft Environmental Impact Report (DEIR) Review #7: Project Funding

Continuation of Discussion on Management & Maintenance (from May 30th meeting), if necessary

5:45 p.m.	Refreshments
6:00 p.m.	Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to
Dodge Hall -- Room 450
NORTHEASTERN UNIVERSITY CAMPUS



From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to Huntington Avenue. Turn left on Huntington. Dodge Hall is on the main quad near the Green Line stop.

From Green Line (E Train):
Get off at Northeastern U. stop and walk across Huntington Avenue to the main quad. Dodge Hall is the building on the left as you enter the main quad.

From the Orange Line:
Exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

From the Parking Garages:
Columbus Ave. Garage: Cross the tracks on the footbridge and continue walking to the main quadrangle. Dodge Hall is to your right.
Renaissance Garage: walk through Ruggles MBTA Station and exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Dodge Hall

Room 450 – 4th Floor

Monday, June 04, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:15

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
John Burckardt, ***P. E****, Project Manager*

II. Process Issues/Organization 6:15 - 6:30

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

III. Review of Draft Comments: (None)

IV. Discussion of Best Management Practices 6:30 – 8:20

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

Presentation by Hugh Mattison
Updates on Current Practices
CAC Discussion of Section 8

V. Questions and Answers (General Public) Wrap Up 8:20 – 8:30

Print Date: 06/04/01

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE
Review of Draft Environmental Impact Report

	Day	Date	Topic for Discussion	WRITERS	Review of Draft Comments	Location
1	Mon.	23-Apr-2001	*Vision Statement/Executive Summary*	***Frances Kemp, George Hagerty, Lauren Meier***	(none)	450 Dodge Hall, NU
2	Wed.	02-May-2001	*Project Alternatives* *Section 2*	***Paul Mentag***	(none)	440 Egan Center, NU
3	Mon.	07-May-2001	*Project Design/Preferred Alternative* *Section 5, Appendix I*	***Arlene Mattison, Eileen Woodford***	*Vision Statement/Executive Summary*	440 Egan Center, NU
4	Wed.	16-May-2001	*Project Impacts and Mitigation* *Sections 6, 7 and 9*	***Ed Cutler, Eileen Woodford,***	*Project Alternatives*	440 Egan Center, NU
5	Mon.	21-May-2001	*Best Management Practices* *Section 2.5*	***Fredericka Veikley, Kathy Baskin, Hugh Mattison, Ed Burke***	*Project Design/Preferred Alternative*	450 Dodge Hall, NU
6	Wed.	30-May-2001	*Best Management Practices* Section 5.7		*Project Impacts and Mitigation*	96 The Fenway, NU Faculty Lounge
7	Mon.	04-June-2001	*Maintenance and Management* *Section 8*	***Hugh Mattison, Suzanne Comtois***		
8	Wed.	13-Jun-2001	*Funding* *Section 10*	***George Proakis, Fran Gershwin, Marion Sabal***	*Best Management Practices*	450 Dodge Hall, NU
9	Wed.	20-Jun-2001	*Miscellaneous* *-MDC* *- Public/Agency Involvement: Section 3 &Appendices K and L* *- Existing Conditions: Section 4 & Appendices B, C, D, E, F, G and H* *- Emerald Necklace Master Plan: Appendix A* *- Introduction: Section 1* *- Responses to ENF Comments: Appendix J* *- Other Issues Not Included in Above Topics*	***George Proakis, Isabella Callanan***	*Maintenance and Management*	96 The Fenway, NU Faculty Lounge
10	Mon.	25-Jun-2001	*Vision Statement – Revisit*	***Richard Heath, June Hatfield***	*Funding*	440 Egan Center, NU
11	Mon.	2-July-2001?	*Open*	***Fran Gershwin, Gary Hilderbrand, Richard, Heath, Arleyn Levee***	*Miscellaneous / Finalize Comment Letter*	?

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7/9

MEMO

To: John Burckardt

rom: Hugh Mattison

Date: June 3, 2001

Subject: Annual Maintenance – General Comments

At the May 30 CAC meeting, Fredericka Veikley presented a request for park maintenance information, and suggested a tabular format. I would like to propose that more specifics be provided to assure the CAC that the proper analysis has been performed, and that funding and other resources proposed are adequate to meet the stated objective "Restore landscape and historic resources."

For example, this would be the chart for one of the four parks in the project area:

	Jurisdiction			Unit of Measure	Number of Units	Current Cost	Additional Cost	Total Cost
Task	Boston	Brookline	MDC					
Back Bay Fens				Acres				
Parkland				Acres				
Maintenance Level A								
Maintenance Level B								
Maintenance Level C								
Watering				Acres				
Graffiti removal				Hours				
Trash removal				Hours				
Planting beds				Square ft				
Active Recreation				Acres				
Voodland				Acres				
Tree pruning				Count				
Parkways				Linear ft				
Tree pruning				Count				

The current cost per unit, as well as the recommended cost per unit, should be provided. This will enable the CAC to understand the current, as well as the future labor requirements and costs that must be committed by the proponents.

BOSTON
Thomas M. Menino, Mayor

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT AND HISTORIC PRESERVATION

MEMORANDUM

DATE: May 31, 2001

TO: Emerald Necklace Citizens Advisory Committee (CAC)

FROM: John Burckardt

RE: Management and Maintenance
Comments/Presentation from Hugh Mattison, CAC Member

Hugh Mattison requests to pass on the following page of his presentation on Management and Maintenance. The rest of Hugh's presentation was distributed to the CAC with my memorandum of May 15, 2001.

c: F. Beatty – Boston Parks & Recreation
E. Chute – Brookline Parks & Open Space
T. Brady – Brookline Conservation
P. Ditto – Brookline DPW
S. Overton Bussell – MDC
S. Jeghelian - MODR

H:\Muddy\Correspondence\20010531 memo to CAC [HMattison comments].doc

Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

Muddy River Restoration Project - Introduction

“A settling basin about 100 feet in length and three feet in depth has been built at the upper end of the channel, for the purpose of intercepting as much as possible the heavy material that will find its way into the channel from the open brook above. The basin will need to be cleaned out once or twice a year. If this work is neglected the basin will be filled to its top, and the surplus material flow along to Leverett Pond, from which it will have to be dredged at considerable extra expense.”

Alexis H. French, Town Engineer,
Report to the Brookline Board of
Selectmen, Feb. 20, 1894

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE
Review of Draft Environmental Impact Report

	Day	Date	Topic for Discussion	WRITERS	Review of Draft Comments	Location
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2	Wed.	02-May-2001	*Project Alternatives Section 2*	***Paul Mentag***	(none)	440 Egan Center, NU
3	Mon.	07-May-2001	*Project Design/Preferred Alternative Section 5, Appendix I*	***Arlene Mattison, Eileen Woodford***	*Vision Statement/Executive Summary*	440 Egan Center, NU
4	Wed.	16-May-2001	*Project Impacts and Mitigation Sections 6, 7 and 9*	***Ed Cutler, Eileen Woodford,***	*Project Alternatives*	440 Egan Center, NU
5	Mon.	21-May-2001	*Best Management Practices Section 2.5 and 5.7*	***Fredericka Veikley, Kathy Baskin, Hugh Mattison, Ed Burke***	*Project Design/Preferred Alternative*	450 Dodge Hall, NU
6	Wed.	30-May-2001	*Maintenance and Management Section 8*	***Hugh Mattison, Suzanne Comtois***	*Project Impacts and Mitigation*	96 The Fenway, NU Faculty Lounge
7	Mon.	04-Jun-2001	*Funding Section 10*	***George Proakis, Fran Gershwin, Marion Sabal***		450 Dodge Hall, NU
8	Wed.	13-Jun-2001	*Miscellaneous -MDC* *- Public/Agency Involvement: Section 3 &Appendices K and L* *- Existing Conditions: Section 4 & Appendices B, C, D, E, F, G and H* *- Emerald Necklace Master Plan: Appendix A* *- Introduction: Section 1* *- Responses to ENF Comments: Appendix J* *- Other Issues Not Included in Above Topics*	***George Proakis, Isabella Callanan***	*Best Management Practices & Maintenance and Management*	96 The Fenway, NU Faculty Lounge
9	Wed.	20-Jun-2001	*Vision Statement – Revisit*	***Richard Heath, June Hatfield***	*Funding*	440 Egan Center, NU
10	Mon.	25-Jun-2001	*Open*	***Fran Gershwin, Gary Hilderbrand, Richard, Heath, Arleyn Levee***	*Miscellaneous / Finalize Comment Letter*	450 Dodge Hall, NU

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – June 4, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager, Boston Parks & Recreation Department

II Process Issues/Organization

Susan Jeghelian, MA Office of Dispute Resolution, CAC Facilitator

- A revised CAC Meeting Schedule was distributed. The Funding Section was moved forward to June 13th, which means all following meetings will also be bumped. An open meeting was proposed for July 2nd (Monday), however, CAC members were concerned about possible vacation plans. Instead, the CAC has ***reserved two dates, Monday July 9 and Wednesday July 18, for extra meetings if needed*** (The revised meeting schedule will be distributed with the next meeting notice).

- The writers of the final letter to the Secretary will distribute a draft to CAC for review by the CAC meeting on June 20th.

- A memo about the Notice of Project Change will be sent to all CAC members within the next few days and members should indicate their preference to Susan Jeghelian prior to the June 13th CAC Meeting (by June 11th).

III Review of Draft Comments – none reviewed

IV Discussion of Management & Maintenance

- Hugh Mattison made a presentation on park maintenance. Hugh also handed around photos and a manual on park maintenance. Hugh suggested that the CAC consider recommending Option 1 (from a slide) that the CAC continue role as ombudsperson, with escalation to Options 2 and 3 if results of maintenance do not satisfy CAC. A printed version of the presentation was distributed to the CAC May 15, 2001.

- Richard Heath suggested that Section 8 needs to be taken out of the DEIR and rewritten, with consultation from professionals in the field.
- **Section 8.1, p 8-3, CAC should be included in list of groups for the Maintenance and Management Plan.**
- **Section 8.1, p 8-3, number 5, who is meant by park partners and private partners?**
- **General Comment: Not enough staff, funding and training for staff for maintenance of the park.**
- Bruce – The CAC has a role as part of the MEPA advisory process.
- Fran Gershwin noted that CAC could request modification of the Secretarial Certificate from CAC annual updates to quarterly updates with access and meetings with proponents.
- **CAC suggested that they might want to have an independent advisory role for management and maintenance throughout the year, perhaps meeting quarterly, in addition to the MEPA annual review.**
- Betsy Shure Gross noted that it is up to the CAC to suggest how funding is tied to accountability.
- **The CAC requested clarification about the authority of the Secretary of EOEA: What recourse is available to the Secretary if the proponents do not fulfill their management and maintenance obligations? What are the repercussions? What or who is the accountable entity?**
- Eileen Woodford commented that there were two levels of discussion. One level is about how the area is managed: who, what, how, cost, accountability, structure, and noted that the current practices are deficient. The other level is that management and maintenance practices by committee will not work.
- Comment from Hugh - If the proponent does not fulfill its obligations, does the Secretary have the power to withhold money and use it to hire out a private contractor?
- **CAC may recommend a modification in MEPA process to ensure accountability.**
- General Comment: Section 8 is missing connections between overall maintenance needs and how those goals will be achieved, including a sense of priorities. The section needs to have the intended result clarified, especially in reference to the desired character of the landscape.

- General Comment: Section 8 is too generic and will not maintain the character of Olmsted's unique landscape.

- Workers need specialized training specific to this landscape, including a skills development piece to maintain the park as Olmsted intended.

- Eileen suggested exploration of two options: 1) centralized administration of the park e.g. an authority that has responsibility and accountability to oversee park maintenance and management 2) establish a trust.

- Ed Burke suggested that the BMP section be put into one section.

- **CAC requested a couple of examples of other park models with multiple jurisdictions (Santa Monica, Blackstone, Kathy Douglas Stone) and a couple of examples of other historic Olmsted parks nationwide for comparison for how they are dealing with park management and maintenance, jurisdiction, authority and enforcement issues. CAC would like to have this information to review within the next few weeks.**

- **CAC agreed to Hugh's request for the Annual Maintenance Chart in terms of historic landscapes rather than a generic park. Hugh's chart is not an exhaustive list and could include more maintenance tasks.** See Hugh's memo, which will be distributed separately.

- **Because there was not enough time to discuss everyone's comments and questions about the details of Section 8, the CAC agreed that members should write up their individual comments and send them to John Burckardt who will distribute them to the rest of the group.**

- **The CAC requested that Table 8-4 and Table 8.5 be modified based on actual field observations and information filled in for Hugh's chart** (Memo will be distributed separately).

- **The CAC asked the proponents to find out if there are funds in this project for the CAC to hire consultants to conduct an analysis of resources needed to maintain BMPs and other regular park maintenance activities, as outlined in Arlene Mattison's memo** (Memo will be distributed separately).

- Funding discussions will occur next week, with follow-up maintenance and management discussions to continue on June 20th.

Summary of Consensus Comments: After a lengthy discussion among the group, the CAC reached consensus on the following comments:

1. *Section 8:* Section 8 is inadequate, in terms of accuracy as to current maintenance practices and in failing to indicate the management and maintenance practices needed to maintain the uniqueness of this park. There is a lack of connection between overall needs, methods to maintain the uniqueness of the Olmstead's

park as opposed to a regular park, and priorities for management and maintenance practices. Strong concern was expressed about a lack of information as to staff, funding, resources and adequate training for staff.

2. *Future Role of CAC:* The CAC would like to explore the future role of the CAC with respect to overseeing park management and maintenance. In addition to the CAC playing an advisory role to the Secretary concerning the MEPA Annual Update, several options were discussed, such as meeting on a quarterly basis with the proponents.

3. *Accountability and Enforcement:* The CAC would like clarification about the Secretary's authority for enforcement of park management and maintenance on this project.

4. *Administration:* CAC wants to explore two methods for oversight of park management and maintenance: multi-jurisdictions and a centralized authority. The CAC has requested that the proponents provide information on management models for other multi-jurisdiction parks as well as a few examples of other Olmsted Parks.

5. *Information* – The CAC would like to see more specific information and figures for the management and maintenance and best management practices for the Emerald Necklace (as requested in the charts in Hugh's memo and Freddie's BMP memos).

V Questions and Answers (General Public) & Wrap Up

There were no questions.

[illegible]

eeting

ne 4, 2001

Sign-In Sheet

Name		Affiliation	Signature
athy	Baskin	Charles River Watershed Association	
harles Alan	Birnbaum	National Park Service	
dward	Burke	Restore Olmsted's Waterway Coalition	E Burke
sabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
uzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
hristine	Cooper	Jamaica Pond Project	
dward	Cutler	Brookline Resident	
argaret	Dyson	Historic Massachusetts	
rances Allou	Gershwin	Mahoney Hawkes, LLP	Frances Allou Gershwin
lan	Goodman	The Abbey Group	
eorge	Hagerty	Fenway Studios,Inc.	
une	Hatfield	Boston GreenSpace Alliance	
ichard	Heath		Richard Heath
ary R.	Hilderbrand	Douglas Reed Landscape Arch.	
dam	Kahn	Brookline Conservation Commission	
rances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	[illegible]

Attachment 1

Emerald Necklace [illegible]
Meeting
June 4, 2001

Sign-In She

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren Meier
Paul	Mentag	Fenway Alliance	
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	~~Fenway~~ Fredericka Veikl
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

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[illegible]

Meeting

June 4, 2001

Sign-In Sheet

nl-cbo.nts.1\MCDR\Ex.Off of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Amanda Griesbach	MODR	617-727-2224	
John Burckardt	P3 c/o Boston Parks	635-4505 617- x 6517	jburckardt@ ci.boston.ma.us
Fran Beatty	Bos Parks	617 635-4505	beatty@ ci.bostn.ma.us
TOM BRADY	BROOKLINE	617-730-2148	
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Jill Ghoreyshani	BPHC	617 534-2682	JGhoreyshani@BPHC.org
Betsy Shure Gross	EOEA		
Susan Jeghelian	MODR	617-727-2224 x 21174	
Kara Willin	Fort Point Ass.	617 357-7044	

MEMORANDUM

DATE: June 7, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Rehabilitation
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Meeting Notice, Other Information

Wednesday, June 13, 2001

Kerr Hall,
96 The Fenway
Northeastern University Faculty Center

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topics: Draft Environmental Impact Report (DEIR) Review #8:
Project Funding

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Please note the Red Sox will be playing that evening at Fenway Park. Traffic will be heavy, parking will be scarce, and the MBTA will be crowded. Please leave extra time in order to arrive on time!

Attachment:

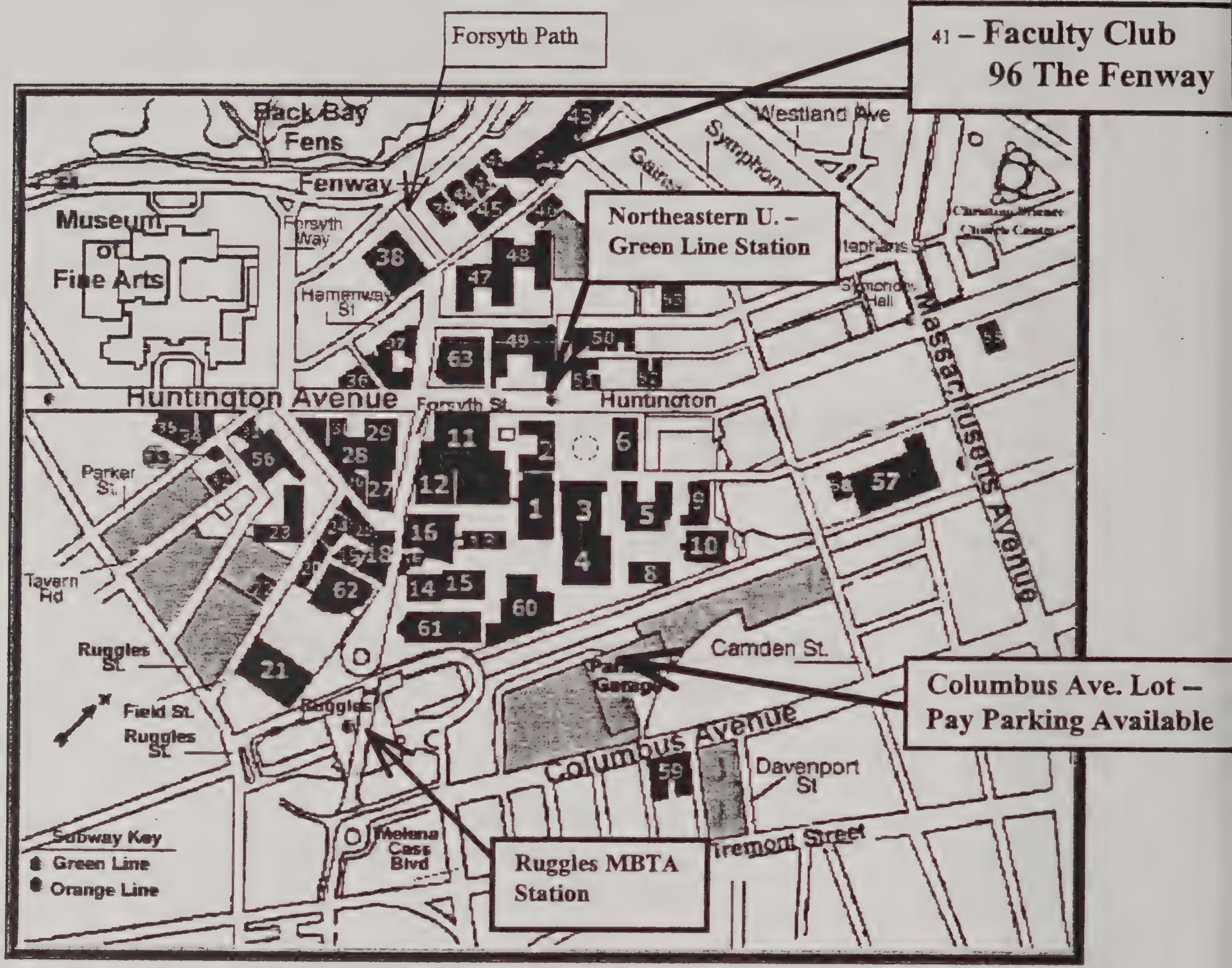
UPDATED Meeting Schedule: **Please add to Tab#6 of the CAC Workbook**

Please note these schedule changes:

- ✓ The discussion of **Miscellaneous** topics is postponed to June 20, 2001.
- ✓ The attached schedule shows 2 possible meeting dates in July, if needed.
- ✓ Comment write-up on **Best Management Practices** will be discussed on June 13, 2001.
- ✓ A draft of the **CAC Comment Letter** will be distributed prior to the June 20th meeting.

Directions to
Northeastern University Faculty Club
Kerr Hall, 96 The Fenway

NORTHEASTERN UNIVERSITY CAMPUS



From The Fenway (walking):

The Faculty Club is at 96 The Fenway, between Westland Avenue and the Museum of Fine Arts.

From Green Line (E Train):

Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Right on Forsyth St. and walk to end. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Orange Line:

Exit at Ruggles Station. Use the Forsyth Street exit. Walk 2 blocks, cross Huntington Avenue (traffic light) and continue one more block. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Parking Garage:

Cross the tracks using the concourse through Ruggles MBTA station. Next, follow direction (above) from Ruggles Station to the Faculty Club at 96 The Fenway.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Kerr Hall

Faculty Lounge

Wednesday, June 13, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
John Burckardt, ***P. E****, Project Manager*

II. Process Issues/Organization 6:15 - 6:30

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

III. Review of Draft Comments: Best Management Practices
Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

IV. Discussion of Funding 6:30 – 8:20

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

V. Next Week's Agenda and Other Housekeeping 8:20 – 8:30

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE
Review of Draft Environmental Impact Report

	Day	Date	Topic for Discussion	WRITERS	Review of Draft Comments	Location
1	Mon.	23-Apr-2001	*Vision Statement/Executive Summary*	***Frances Kemp, George Hagerty, Lauren Meier***	(none)	450 Dodge Hall, NU
2	Wed.	02-May-2001	*Project Alternatives Section 2*	***Paul Mentag***	(none)	440 Egan Center, NU
3	Mon.	07-May-2001	*Project Design/Preferred Alternative Section 5, Appendix I*	***Arlene Mattison, Eileen Woodford***	*Vision Statement/Executive Summary*	440 Egan Center, NU
4	Wed.	16-May-2001	*Project Impacts and Mitigation Sections 6, 7 and 9*	***Ed Cutler, Eileen Woodford,***	*Project Alternatives*	440 Egan Center, NU
5	Mon.	21-May-2001	*Best Management Practices Section 2.5*	***Fredericka Veikley, Kathy Baskin, Hugh Mattison, Ed Burke***	*Project Design/Preferred Alternative*	450 Dodge Hall, NU
6	Wed.	30-May-2001	*Best Management Practices* Section 5.7		*Project Impacts and Mitigation*	96 The Fenway, NU Faculty Lounge
7	Mon.	04-June-2001	*Management & Maintenance Section 8*	***Hugh Mattison, Suzanne Comtois***	(none)	450 Dodge Hall, NU
8	Wed.	13-Jun-2001	*Funding Section 10*	***George Proakis, Fran Gershwin, Marion Sabal***	*Best Management Practices*	96 The Fenway, NU Faculty Lounge
9	Wed.	20-Jun-2001	*Management & Maintenance – Update from Proponents* *Miscellaneous -MDC* *- Public/Agency Involvement: Section 3 &Appendices K and L* *- Existing Conditions: Section 4 & Appendices B, C, D, E, F, G and H* *- Emerald Necklace Master Plan: Appendix A* *- Introduction: Section 1* *- Responses to ENF Comments: Appendix J* *- Other Issues Not Included in Above Topics*	***George Proakis, Isabella Callanan***	*Maintenance and Management*	440 Egan Center, NU
10	Mon.	25-Jun-2001	*Vision Statement – Revisit*	***Richard Heath, June Hatfield***	*Funding*	
11	Mon.	9-July-2001 (if needed)	*Open*	***Fran Gershwin, Gary Hilderbrand, Richard, Heath, Arleyn Levee***	*Miscellaneous / Finalize Comment Letter*	*to be determined*
12	Wed.	18-July-2001	*Open*			*to be determined*

DRAFT Comments on Best Management Practices (Section 2.5)
Emerald Necklace Citizens Advisory Committee (CAC)

Note: Below are edits offered by E. Woodford and agreed to by those CAC members at the meeting on June 13, 2001.

General Comments:

1) Secretary is looking for a pathway for protecting the resource of the Muddy River. CAC can help the Secretary convince the national government and other entities to fund this project. The Secretary is not interested in speed, but is interested in advice.
1) Comment made that we need to step back and look at broader issues.
2) Wherever eroded banks are referenced, include eroded paths.
3) Need to be more clear about which practices are currently implemented and which are possible alternatives.
4) Need to be clear that this section is a laundry list and not recommendations. There ~~needs to~~ should not be a differentiation between Best Management Practices and maintenance practices. These topics should be combined in a common section of the report.
5) BMPs tend to be focused on water quality but not the other 4 project objectives.

Detail Comments:

Section 2.5, p. 2-84, 2nd bullet needs to be more specific by adding "improve water quality in the Muddy River to a Class B level, thereby also contributing to the improvement of water quality in the Charles River."

Section 2.5, p. 2-84, add another bullet before the 5th bullet – "contribute to fishing and recreational uses in the Muddy River."

Section 2.5, p. 2-84 Change "The selected alternatives are further described in Section 5.7 (not 5.6)". Check any other references in this section.

Section 2.5, p. 2-84. "A goal of the project is to reduce sediment loads by another 30%." The CAC was reluctant to set a higher goal, which would be desirable considering the effort and expense going into this project, and decided to request further information from the engineers to understand better the implications of asking for further reductions of sediment loads. Suggest making reference to the Emerald Necklace Master Plan and Olmsted's original design. The CAC recommends further explanation of the actual physical changes needed to achieve the 30% and support for arriving at this figure. For example, what would the cost of each change be, and how much would it reduce sediment loads.

Section 2.5.1, Table 2-2

General Comments –
1) change bullet symbol (printing as "T") to sequential numbers.
2) want table to be more clear. In addition to city/town and proponent responsibilities, also include and identify practices that apply specifically to Muddy River area, either in another column or a separate table. See Street Sweeping below.
3) Request analysis of what BMP's are being implemented/not implemented, either in a narrative or separate chart.

Detail Comments -

Illegal Sanitary Connections Remediation Program - request more current data than 1990 reference to illegal connections.

Residential Stormwater Monitoring Project – Recommendations should mention geese as well as dogs.

Section 3.0 – Stormwater and Sanitary Sewer Systems – there should be an explanatory footnote about 'NPDES'.

Particle Separators (Private) - clarify that ft.^{2} = square ft. Add a description of how private parking compliance is maintained.

Commercial Area Stormwater Monitoring Project - include summary of the findings from the final report.

Street Sweeping – list of street sweeping activities is city-wide. Add detail on what street sweeping is now performed specifically in the project area. Currently street sweeping in the Fenway is resident-driven, and should be required and added to the recommendations.

Management of Public Open Space Maintenance Practices – Clarify what actions will be taken about oil leaking from the former Brookline DPW site.

Section 2.5.2 General Comment - need to raise issues of future maintenance and funding under multiple jurisdictions in the **Parking Lot** section.

Section 2.5.2 p. 2-92 'Typical urban runoff – litter, animal waste (5% to 25%)'. Change this from text to a bullet.

Section 2.5.2 figure 2-40, Add this pie chart to the **Executive Summary** to emphasize that 85% of urban runoff is related to maintenance. Create a separate chart that shows just maintenance.

Section 2.5.2.1 Catchbasin Cleaning – Add funding source.

Section 2.5.2.1 p. 2-95 Catchbasin Cleaning – CAC requests that the MDC define and break down their budget for all maintenance items. Now, maintenance budgets are kept only by Division (Charles River).

Section 2.5.2.1 p. 2-95 Clarify definition of Pecheko law as it relates to MDC privatization issues. Add to **Parking Lot**.

Section 2.5.2.4 p. 2-96 "Most of the illicit connections have already been identified….." "Most" should be quantified.

Section 2.5.2.5, p. 2-97, suggest increasing frequency and number of hazardous waste collection sites and recommend institutional parking lots adjacent to the parks for possible collection sites.

Section 2.5.2.6, p. 2-97 (Lawn, Garden, and Park Maintenance) First and second bullets – why is MDC shown, and not proponents? Third bullet - question the accuracy of the statement about soil aeration being done in spring and fall. Add CAC recommendation that composting in Victory Gardens be moved up-land away from the river. Garbage should be removed in the fall.

Section 2.5.2.6, p. 2-97, Trail Maintenance - what efforts are being made to discourage dirt bike trails?

Section 2.5.2.7, p. 2-97 – typo in second last sentence, "very" should be "every"

Section 2.5.2.7, p 2-98 "City of Boston has comprehensive street sweeping program". What streets in the watershed are included? This should be more specific.

Section 2.5.2.8, p. 2-99 last sentence, change "investigating alternative methods of pavement deicing" to "developing alternative methods of pavement deicing".

Section 2.5.2.9, p. 2-99 Stormwater Bylaws - explain why there needs to be a designated feeding area for geese and ducks and provide more specifics on by-laws, and who will provide enforcement of pooper scooper laws.

Section 2.5.2.10, p. 2-99 Stormwater Guidelines......– Clarify and quantify the proposed tax incentives.

Section 2.5.2.11, p. 2-100 Restoration of Eroded Banks (fifth bullet), change "would provide a method", to "will provide a method".

Section 2.5.2.11, p. 2-100 Correcting MDC curb settings (sixth bullet), change "which should be incorporated", to "which will be incorporated".

Section 2.5.2.11, p. 2-100, Add bullet to keep oil runoff from streets out of the river in Boston and Brookline, including oil separators.

Section 2.5.3, p. 2-101 Treatment Control Options - need to include maintenance details of evaluating various BMPs.

Section 2.5.3, p 2-101, last paragraph - the scope of the Center for Watershed Protection Study should be broader. Village Brook study may be too specific.

Section 2.5.3, p 2-103 (Treatment Control Options – In-line Sewer Treatment Devices). Section specifics on whose doing water quality testing and with what money.

Section 2.5.4, p. 2-105 Summary of BMP Alternatives - Last sentence should be more specific. Add text "consistent with recommendations in Section 5".

Section 2.5.4.1, p. 2-106 Selected Source Control BMPs – 4th bullet "Maintain restored banks, pathways and uplands (BPRD and Brookline)'. Add "with particular care and attention to active recreation areas adjacent to water (i.e. Daisy Field)".

Section 2.6, p. 2-109, Screening of the Project Alternatives and Selection of the Recommended Plans – "It includes full bank to bank dredging....list," add text "and restoration of historic structures, such as the Carlton Street Footbridge".

Prepared by Hugh Mattison

DRAFT Comments on Best Management Practices for Stormwater Runoff (Section 5.7)
Emerald Necklace Citizens Advisory Committee (CAC)

General Comments:

1) Freddie Veikley discussed an email in which she expressed concern about BPRD being able to commit to completing the BMPs based on assurances from other departments and the MDC. This is a weakness in the process and compromises the proponents' authority. The organization of the BMPs in the DEIR is scattered through different sections. There is no clear explanation of how they will work, when they will be implemented, what they will cost, and how they will be paid for. A chart detailing the problem, sources, jurisdiction, remediation, cost, funding source, and date for implementation would be useful.
2) instead of stating owners "should", document should state it "is necessary" for owners to..... Language needs to be strengthened. References should be made to sections that describe how these recommendations will be enforced.
3) Section 8 (Management and Maintenance) reflects the CAC's desire for more specifics.
4) There should be a commitment in the document from the City of Boston and Town of Brookline. For example, they will do what, with what budget. The DEIR presents recommendations from consultants, not a commitment by proponents to follow these recommendations. If Brookline Town Meeting does not vote for budget, what is the remedy **(PARKING LOT)**?
5) Information about BMP's anticipated costs for future years should be provided by the City of Boston and Town of Brookline. Both BMP capital improvements and BMP maintenance costs should be shown. See Section 8.11.3, page 8-40 for BMP cost chart (this chart is not adequate). Note – Bruce Conklin (CDM) commented that if the department has sufficient staff and resources, it was assumed that there will be no additional costs and therefore the costs were not broken down in DEIR. If departments did not have sufficient staff, equipment or maintenance, then the increased costs for these needed resources were identified in DEIR. CAC questioned this assumption. Was evidence provided by field observation, or merely by interview? There should be more information *from the consultants* as to whether sufficient resources exist.
6) Scope/boundaries of project - will be further discussed under Funding Strategy (Section 10). How will eroded upland slopes located beyond the project boundary be addressed? Note – Laura Rome commented that the Project "extends well beyond the banks of the river to include the historical landscape as well."
7) Public Education – Would like to see descriptive boards and signage describing the project and types of equipment used in restoration. **PARKING LOT.**
8) Would like to see a visual included, showing project boundaries with shaded and unshaded areas.
9) Section 8, Management and Maintenance – How will park be maintenance be enforced in the future without citizen oversight? Questions about how often CAC will meet, etc. **PARKING LOT.**
10)

Detail Comments:

Section 5.7.1, p. 5-57, Basin-wide Source Control BMPs:

General Comment: How can this be enforced?

1st bullet - water quality samples should be taken more frequently than annually and should be consistent with the frequency of sampling described in section 8. Samples should be taken consistently from the same sites to allow historical tracking. See Section 8 for relevant language.

2nd bullet - reword this section, strengthen language. Replace "should" with "is necessary" or "is recommended".

3rd bullet - Who is going to coordinate information for the amount of de-icing products and how will these be implemented and enforced?

5th bullet p. 5-59 – how will trail maintenance to correct desire lines and prevent erosion be addressed beyond the boundaries of the project?

Section 5.7.2 p. 5-59 Basin-wide Treatment Control BMPs - Discussion about pilot program and particle separators and questions to Bruce Conklin (CDM). Money is available for four additional particle separators if needed. Each separator costs $8-900,000.

Section 5.7.3 p. 5-59 Charlesgate – What current BMP's exist in the Charlesgate area?

Section 5.7.3, p. 5-59, last sentence – Add "repair", along with street sweeping and catch basin cleaning.

Section 5.7.4.1, p. 5-60 Back Bay Fens, Source Control BMPs - first paragraph – "compost" should be changed to "yard waste/plant waste/garden waste", and it should be removed more frequently.

Section 5.7.4.1 – Victory Gardens is a private entity which will need to enforce pesticide control. The Parks Department does have jurisdiction over the Garden Society. Fran Beatty noted they have discussion each year with the Victory Gardens. Public education should be coordinated with the Victory Gardens **(PARKING LOT)**.

Section 5.7.4.2, Table 5-7 – Victory Gardens dredging volumes (12,445) seem high. Bruce Conklin (CDM) is going check the levels referenced in the table.

Section 5.7.7.2 p. 5-63 Willow Pond Treatment Control BMPs - is there any BMP related to the West Nile Virus in Willow Pond? Willow Pond was the center of the mosquito infestation in 2000.

Section 5.7.8 p.5-64 Enforcement and Monitoring of BMPs – The CAC is concerned about MDC ability to maintain parkways and their need for funding (Parking Lot to address the need for MDC funding). John Burckhardt reports that Samantha Overton is prepared to implement catch basin improvements. (Source of funding was not specified.)

Section 5.7.8, p 5-64 – need to reword last sentence in first paragraph, their dogs instead of themselves.

Section 5.7.8, first (litter control) and fourth (monitoring of BMPs) paragraphs – CAC would like to know what enforcement will be provided if BMP practices are not maintained.

Section 5.7.8, third paragraph – suggest that the last sentence does not belong here, not "fail to provide budget…". What steps are they taking to provide budget for operation and maintenance costs?

Section 5.7.8, first bullet – clarify what "annually" means. Does the "annual" program include quarterly sampling?

Prepared by Hugh Mattison

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – June 13, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager, Boston Parks and Recreation Department

II Process Issues/Organization

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Jane will facilitate the remainder of the CAC meetings. Jane can be reached at MODR at 727-2224 x 21172 and email: jane.wells@state.ma.us
- Amanda Griesbach from MODR will continue to assist Jane.
- John distributed an announcement of a community meeting regarding improvements to the Back Bay Fens Gate Houses at the Northeastern University Faculty Center (96 The Fenway) on Wednesday, June 27, 2001 (See Attachment 2).
- *Notice of Project Change* – Jane Wells agreed to contact Laura Rome for MEPA's perspective on the Notice of Project Change. A report of responses of CAC members on this issue will be provided next week.
- Section 8, Hugh invites members to send in comments on the Maintenance and Management, which CAC will discuss the agenda next week.

III Review of Draft Comments – Best Management Practices

- *Under General Comments*: There should not be a differentiation between Best Management Practices and maintenance practices as written in the notes. These two items should be folded together.
- *General Comment* – BMPs only deals with water quality, but they need to meet the other project objectives.

IV Discussion of Funding

- MEPA does not typically require funding options, but due to the complexity and size of the project and the multiple jurisdictions with a shared responsibility for funding of the project, MEPA is looking for options that are actively being pursued by the proponent, not just a menu of options.
- Proponent supports targeting major funding sources, ie. Army Corps of Engineers, who expressed an interest in expanding its role. Jane Swift sent a letter to the president to encourage and facilitate the Army Corps participation in this project.
- The Army Corps will indicate their level of contribution, which has traditionally been flood control but will likely be expanded to include BMPs and habitat restoration. Corps will develop a decision document at the end of the year, which will identify their participation in the project.
- John – Army Corps normally does an economic analysis, which reflects a range of options that aren't necessarily implemented.
- David Noonan, CDM, is trying to coordinate with the Corps so that there won't be a major impact on the DEIR. If there is a major change, he will inform the CAC.
- P. 10-2, Section 10.3, expand to say institutions and other organizations, instead of just institutions. Expand to include Brookline.
- *General Comment* – This whole section needs more work.
- *General Comment* - The section does not address the issue of capital funding, but mostly discusses maintenance funding.
- Need to establish a list of institutions that may donate to the capital fund, and encourage formalized relationships with these institutions.
- A CAC member noted that institutions may be making in-kind contributions such as graffiti removal, which would be an additional cost if added to Boston's budget. Should these arrangements be formalized? Another member noted that institutions who are making in-kind contributions may not want to contribute to capital costs.
- Proponent should provide clear expectations for funding needs (capital vs. maintenance) from educational, cultural, medical and private development institutions.
- Table 10-2, Second listing of City of Boston should be Brookline.

- Betsy Gross: Because municipalities were investing funding on a long-term basis, they were not expected to put more money into the budget. However, with the increase in project costs from 43 to 92 million, this gap in funding needs to be filled. The Commonwealth expects the municipalities and private sectors to help fill this gap; they are expecting the municipal partners to also partner the funding costs.

- Army Corps usually provides 60% of municipality share and 90% of Federal share.

- **The CAC agrees that the proponents should list themselves as a funding source, particularly for the Capital portion of the project.** The City and Towns will lose credibility when they ask for money from the private sector, if they do not contribute financially.

- **The CAC discussed a new model of public/private partnership to fill the gap. The proponents need to strengthen this model and expand this section.**

- *General Comment:* **Fundamental vs. supplemental funding? What is the realistic possibility of securing funding. There needs to be a reality check to determine the proportion or percentage of funds that are available from each source.**

- Table 10-2, David Noonan, CDM, The table presents a hierarchy of funding sources, which will become more accurate after the Army Corps indicates their level of contribution.

- **CAC suggests arranging Table 10-2 into tiers that subdivide funding sources by level of contribution.**

- Table 10-2, CAC questioned the accuracy of amounts that could be awarded.

- *General Comment:* This section should clearly reflect how much funding can realistically be secured from various funding sources, so the municipalities can realize the level of their required contributions.

- Matching funds need to be accounted for separately from Federal and State Sources. ie, if the project obtains a matching grant from the Federal government, it should not be matched with State matching funds!

- How will various parts of the project, funded by different sources, be managed in a cohesive way? John envisions that the Corps will do both federal and non-federal parts of the project. The Corps will form an agreement, then the proponent would gather funds and distribute them to the Corps, who would manage the money/project. Corps may hire a consultant and the City of Boston would also likely have a full time person on the project. John meets with Corps on a monthly basis. *The CAC expressed some reservations about this arrangement.*

- Fran reminded the CAC that property still belongs to City of Boston and City of Brookline, both of whom would want accountability from the Corps.

- **Parking Lot:** CAC has concern re: Accountability, especially during construction management and maintenance issues.

- The Secretary views this project as something that could be used as a National Model, involving multi-jurisdictions, etc. Therefore it is not clear who will manage the project. *The CAC needs to give advice to the Secretary (as basis for the Certificate) on the scope of the project and how it will be carried out.*

- Jay Cortell: MEPA does not expect proponent to have secured funding for the project by the time this document is submitted. The DEIR needs to have an overall plan for how funding can be achieved. MEPA will not let the Charlesgate portion of the project go forward, unless the proponent can demonstrate that funding is secured for the entire project.

- **Where does the CAC's request for an independent consultant fit into the management plan? What is the timeline and how would this impact the MEPA process?** Fran is not sure whether CAC can hire a consultant, although she has looked for a historical landscape architect, who is available to work on a fast-track basis. The CAC requests having some involvement in the selection process. Fran will have the name of a potential candidate at the next meeting on June 20th.

- Fran, the proponent is aiming to provide 60-75% of the information requested by the CAC, particularly a revised outline of the three ways of governance.

- **CAC is concerned about a segmented project and making decisions on how to get the fast-track portion moving forward, without having received information on the previous sections.**

- CAC interested in reviewing Parking Lot issues, which may impact implementation of the project. Kara will be compiling the Parking Lot comments.

- Page 10-10, Emerald Necklace Conservancy is mentioned, but there is no articulated role. What is there role?

- **CAC suggested separating funding into two categories: capital funding sources and maintenance sources.**

- **Maintenance needs funding source table like Table 10.2.**

- Simone Auster of the Emerald Necklace Conservancy - There are many organizational relationships to be worked out. Conservancy is going to focus of the restoration of the greenspace parkland (and not the Muddy River restoration) and in the future, plans to put together an endowment. However, the role, amount of money, etc has not been worked out yet.

- Section 10.9, Add implementing comprehensive maintenance plan.

- Section 10.4.3, Delete Section, or state that there is unlikely to be additional funding, unless....

- The document understated the ability of the State to provide funding and the proponents need to develop and implement a legislative strategy, similar to that proposed on the Federal, congressional level. Fran stated that a strategy has been developed but was not included.

- Section 10.8, **Need to go beyond an investment potential to a strategy.** There may be other State funding options, for example a Bond payment mechanism. The proponents need to be creative; if there is a revenue stream to pay back the bonds, then it may easier to put together [e.g. Red Sox Legislation].

- **Legislative strategy needs to include a management approach as well as State funding.**

VI Next Week's Agenda and Other Housekeeping

- Fran will provide name of consultant.

- Notice of Project Change decisions.

- CAC needs to look at list of writing teams and make sure that people are working together, i.e. Final letter, Richard has starting working on the letter but will need help. If there are comments, please send them to Richard or other members of the writing team.

- Next week, the CAC will review summary of notes of Maintenance to date and continue the discussion of this section.

- What ability do MEPA and the Secretary have for enforcement? Jane Wells from MODR to call Laura Rome for information.

- For the letter to the Secretary, what is the future and continuing role of the CAC?

- MODR will provide a list of parking lot issues for review by CAC.

- CAC suggested Appendix J (Response to ENF Comments) as a priority from the Miscellaneous Sections for the June 20th meeting.

Attachment 1

Emerald Necklace [illegible] Committee

Meeting

June 13, 2001

Sign-In Sh

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	Ed Burke
Isabella M.	Callanan	Friends of the Muddy River	
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	Frances Allou Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	

Attachment 1

[illegible]

Meeting

une 13, 2001

Sign-In Sheet

Name		Affiliation	Signature
ohn	Leahy	Northeastern MPA Student	
rleyn A.	Levee	National Assn. For Olmsted Parks	
rlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
ugh	Mattison	Friends of Leverett Pond	Hugh Mattison
auren	Meier		
aul	Mentag	Fenway Alliance	
ane	Pfister	Brookline Resident	
eorge	Proakis	Boston Resident	
arion	Sabal	Fenway Garden Society	Marian Sabal
oscoe	Sandlin	Fenway Community Development Corp	
oyce	Starner	Symphony United Neighbors	
redericka	Veikley	Fenway Civic Association	Fredericka Veikley
ileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

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Emerald Necklace Citizens Advisory Committee

Meeting

June 13, 2001

Sign-In Shee

\\Anf-cbo.nts.1\MODR\Ex Off. of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Jane Wilder	MODR	617-727-2224	
Amanda [illegible]	MODR	617-727-2224	
Kara Wilin	Fort Point Assoc.	617 357 7044	
John Burckardt	PB c/o Boston Parks	617-635 4505 x6517	jburckardt @ci.boston.ma.u
[illegible]	[illegible]	[illegible]	[illegible]
Fran Beatty	Bos Parks	617·635·4505	beatty@ ci.boston.ma
Simone AUSTER	Emerald Necklace Conservancy	617-722-9823	SAUS 829 abe
JAY CORTELL	CORTELL ASSOC.	781-890-3737	jcortell@cortell.c
Claire Elkey	Fenway Garden Soc	617.266.1169	95 Back Bay Boston [illegible]
Betsy Shure Gross	EOEA		

MEMORANDUM

DATE: June 14, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

PLEASE NOTE MEETING LOCATION!

Wednesday, June 20, 2001

Northeastern University
Egan Engineering /Science Research Center
Forsyth Street (next to Ruggles Station)
Room 440 (4th Floor)

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topics: Draft Environmental Impact Report (DEIR) Review #8: Miscellaneous Topics:

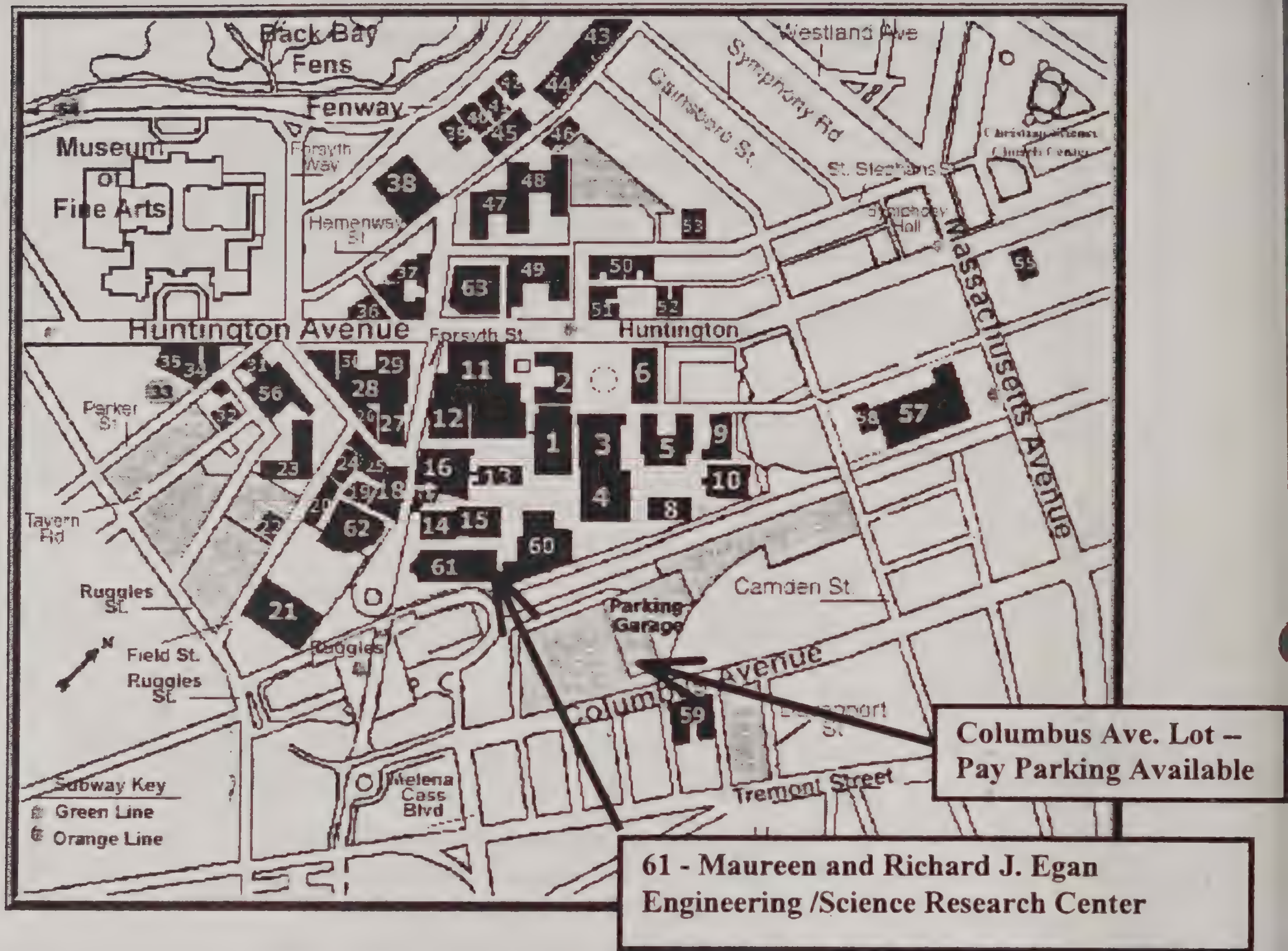
- ☐ Update on Management & Maintenance issues:
  - Review of CAC comments from June 4th meeting
  - Examples of park management models
  - Consultant to review park maintenance issues
  - Possible future role for CAC members in maintenance oversight
- ☐ Review of "parking lot" issues
- ☐ Review of **Appendix J** – Response to ENF Comments*

* *CAC Members – Please review **Appendix J** before the June 20th meeting.*

5:45 p.m.	Refreshments
6:00 p.m.	Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to
Maureen and Richard J. Egan Engineering /Science Research Center
Room 440 – 4th Floor
NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot -- Pay Parking Available

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee
Northeastern University - Egan Engineering/Science Research Center
Room 440 – 4th Floor

Wednesday, June 20, 2001
6:00p.m. - 8:30p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
*John Burckardt, **P. E**, Project Manager*

II. **Process Issues** 6:15 - 6:30
Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- *Notice of Project Change*

III. **Update of Executive Summary** 6:30 – 6:45

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Bruce Conklin, CDM

IV. **Update of Management and Maintenance** 6:45 – 7:15
Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- *Consultant to Review Management and Maintenance – Fran Beatty*
- *Review of CAC Draft Comments(to date) on Section 8*

V. **Review of "Parking Lot" Issues** 7:15 – 8:00

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

VI. **Review of Appendix J** 8:00 – 8:20

VI. **Questions and Answers & Wrap-up** 8:20 – 8:30

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Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – June 20, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager
Boston Parks and Recreation Department

- Isabella mailed in copies of comments, which John distributed.
- Make a list of remaining tasks at the end of the meeting.

II Process Issues

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Only 4 CAC members have responded to the Notice of Project Change to date (two support proponents, one said no and the other abstained).
- CAC members in attendance will vote on the Notice of Project Change before the end of the meeting and the remaining members will be surveyed via phone.
- Question raised regarding the loss of FEMA funding. Fran clarified that FEMA can keep money without concern. However, they are focusing and watching the process because the funds are not being spent.
- Jane summarized issues surrounding Notice of Project Change.
- Ed stated CAC should allow the project change to get the process moving in order to expedite the restoration of the River.
- Paul stated that CAC should allow the project change in order to get project moving in order to secure funding.
- Arlene wants more time to finalize the maintenance and management section.

- CAC previously asked about their role after the Special Review Procedure. Jane referred to Section 11.09 (f), in the Environmental Regulations. "After the Proponent files the final review document called for in the Special Review Procedure, the CAC may consult with the Secretary and the Proponent to determine whether it shall have any role in any future actions on the Project."

- Eileen stated that CAC could ask the Secretary to ask the Proponents to work with the CAC. Jane suggested that the CAC could make a plan in the Fall for continuity, arranging for the # of members to meet, who convenes the meeting, who facilitates and how often meetings occur.

III Update of Executive Summary

- Bruce Conklin (CDM): Recognized that CAC spent significant amount of time on the Executive Summary. The first two sections of a revised Executive Summary, including revised format and content, have been completed and distributed to the CAC. Bruce asked for feedback from CAC members for the following two questions: Are we in the right direction and is this the format and tone CAC would like to see?

- Fran stressed that the revised Executive Summary is a work in progress.

IV Update of Management and Maintenance

- Fran distributed two resumes for potential consultants to be hired to work with CAC to review maintenance and management. Tim Marshall of ETM Associates, L.L.C and Clarissa Rowe, Landscape Architect.

- Arlene asked Fran if she had researched Prospect Park and Central Park because they both have historical landscapes and may provide effective models for maintenance issues.

- Consultant will be contracted through Parsons Brinkerhoff. The proponent has the money to hire a consultant. The CAC could manage the consultant or this could be handled by the Proponent, under the assumption that the consultant would respond to the specific interests of the CAC.

- Proponents tried to find consultants who have a specialty in historical landscape architecture.

- Hugh asked both consultants could be hired, because one seems to have more practical knowledge and the other more theoretical knowledge. Answer is Yes.

- Eileen requested initial scope of work for the consultants by the next meeting, or the meeting after.

- MEPA will allow the proponent to present several alternatives for the organizational structure of Chapter 8 (Maintenance and Management) in the DEIR. The proponent will select one alternative before the EIR is submitted.

- The CAC's letter to the Secretary can suggest that the Secretary issue a directive as part of the Certificate to outline the parameters for Section 8 that need to be addressed.

- Arlene expressed concern about enforcement of maintenance, management and funding and how this is carried out.

- Bruce commented that Proponent is working to establish a structure/organization for maintenance and management in order to secure political support.

- Simone responded that conservancies are started across the country to work with parks to address maintenance and management issues. This Emerald Necklace Conservancy was formed to bring a number of groups together. Simone questions whether CAC should be making the decision on which model will be chosen when the Conservancy is contributing millions of dollars. Simone also asked: has CAC set the standards for management and maintenance?

- Fran recapped Chapter 8 concerns: governance, on the ground maintenance and accountability and enforcement. If CAC has further concerns, they should contact Fran. Consultants will be providing recommendations on maintenance, specifically for historical parks.

- Revised Chapter 8 will be distributed prior to July 9th meeting.

- Proponent is putting together a revised outline of Chapter 8 to distribute to CAC.

- Models 1: Fran spoke with Island Alliance, whose success is based on collaboration with the Federal Park Service. Their particular role is to fund raise, and are required to raise ¼ of capital costs of Park.

- Eileen commented that the Island Alliance model does not address the issue of multiple jurisdictions.

- Model 2: Southwest Corridor Park (60 acres) spends $125,000 per year to run volunteer program. Some of that cost includes trash bags, gloves, food, etc.

V Review of Parking Lot Issues

- Parking Lot Issues list in included as an Attachment.

- Writers assigned to Miscellaneous will write up Parking Lot issues.

- CAC will include in letter to Secretary a proposal about the role of the MDC.

- MDC is included in funding list but how they do the work needs to be established.

- Many of the items listed in the Parking Lot have previously established consensus.

- Eileen commented that some parking lot issues address construction phase of maintenance and management, but that also apply to operation – this is a transition period. Text needs to clarify whether these are construction or maintenance issues.

- Courts have limited how much of a contractors money can be withheld (5%) if they do not follow-through with maintenance. CAC could recommend that the highest amount be withheld.

- The last bullet of the Parking Lot still needs to be addressed in the DEIR. This issue will be addressed by Bruce.

- There is a memorandum of understanding between City of Brookline and City of Boston. A similar process would be instituted for payment.

- CAC should be clear and specific about the roles of the Boston and Brookline. CAC can request Memorandum of understandings or licenses, etc, to ensure that local government maintains control, regarding Army Corps of Engineers.

VI Review of Appendix J

- Bruce: Appendix J is a tool to ensure comments to the Secretary are addressed.
- Isabella commented that document is extremely inconsistent in its listings of birds. In their letter in Appendix J, they suggested that the Proponents consult with Mass. Audubon, which did not receive response from Proponent.

- Bruce reported that the LAC consulted with Mass Audubon to identify habitats around Muddy River and did not intend to list all the bird species that exist there. Bruce noted however, that if a CAC member was concerned that a question had not been answered to please contact him.

- The CAC agreed that they would not review the other Appendices. However, if there are comments and questions that still need to be answered please send your comments to the writers for that section.

VII Questions and Answers & Wrap-up

- Fran stated that CAC can make a laundry list of changes needed for visuals and maps included in the document so that the Proponent can begin to make revisions.
- Next weeks agenda: Review draft letter, review funding section, review initial scope of work for consultants, feedback from Fran on models, report on Notice of Project Change.
- Remaining Tasks include: drafting final letter to the Secretary, etc.
- A public hearing is scheduled for June 26th, regarding street sweeping in Fenway.
- A revised schedule is included as an Attachment.

Emerald Necklace Citizens Advisory Committee

Meeting

June 20, 2001

Sign-In She

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	
Isabella M.	Callanan	Friends of the Muddy River	
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	Ed Cutler (Hm)
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	Frances Allou Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		
Gary R.	Hilderbrand	Douglas Reed Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Attachment 1

Emerald Necklace Citizens Advisory Committee
Meeting
June 20, 2001

Sign-In Sheet

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		
Paul	Mentag	Fenway Alliance	Paul J Mentag
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	Eileen Woodford

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Emerald Necklace Citizens Advisory Committee

Meeting

June 20, 2001

Sign-In Shee

\\Anf-cbo.nts.1\MODR\Ex.Off. of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Patrice Kish	DEM/251 Causeway St.	617·626·1379	patrice.kish@sta ma.
Simone Auster	Emerald Necklace Conservancy	617-722-9823	→
John Burckardt	c/o Bos. Parks	617-635-4505 x6517	jburckardt@ci.boston.ma.
Fran Beatty	Bos Parks →	617635-4505	Beatty@ci.boston.ma
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.co
Tom Brady	Town of Brookline	617-730-2148	tom_brady@town.brooklin

Emerald Necklace Citizens Advisory Committee (CAC)

PARKING LOT ISSUES

(as of June 13, 2001)

May 5, 2001 Meeting

- P. 2-97, 2.5.2.6 First part of section is inaccurate, should include responsibilities of all proponents and other responsible parties, in the form of list/chart. Within actions, "should" vs. "is" needs to be clarified. All proponents and responsible parties should be held to equal standard in regards to maintenance and management. Parking Lot:: revisit in BMP's discussion.

- Parking Lot:: Discuss MDC Issues at June 13 Meeting on Miscellaneous topic. Request a rep from MDC to provide information on accountability of MDC at June 13 Meeting.

May 7, 2001

- 5.1 on p. 5-2, "installation of new park benches and trash cans." "Virtual" Parking Lot.

- The proponent should work with CAC to come up with a process that involves MDC and other appropriate agencies or entities (move to parking lot).

May 16, 2001

- Parking Lot: Recommend process be put in place for site inspection and checking of vegetation prior to transfer from contractor to municipalities to ensure the vegetation is in good shape when the contract is done.

- Section 6.4.1, second to last paragraph, need to include more strategies for discouraging geese, in addition to the strategy of planting vegetation. Planting will be done consistent with historic intent. Planting alone may not solve the geese problem. Parking Lot:: May need protective fencing until vegetation is established.

May 21, 2001

- Section 2.5.2.1, last paragraph, inaccurate explanation of law. Need to revise. Recommendations need to be included in Parking Lot.

- General Comment, need to raise issues of future maintenance and funding under multiple jurisdictions, Parking Lot.

May 30, 2001

- Parking Lot: Public Education – CAC would like to see descriptive boards and signage describing the project and types of equipment used in restoration.
- Section 5.7.4.1 – Victory Gardens are a private entity who will need to enforce pesticide control. The Parks Department does have jurisdiction over the Garden Society. Fran noted they have discussion each year with the Victory Gardens. Public education should be coordination with the Victory Gardens (Parking Lot).
- CAC is concerned about MDC's ability to maintain parkways and their need for funding (Parking Lot to address the need for MDC funding).

June 13, 2001

- Parking Lot, CAC has concern re. accountability, especially during construction management.

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

Directory of Members

C:\windows\TEMP\CAC Directory.xls

Name		Affiliation	Street	City	State	Zip	Phone	E-mail
Kathy	Baskin	Charles River Watershed	2391 Commonwealth Avenue	Auburndale	MA	02466-1773	965-5975 x228	kbaskin@crwa.org
Charles Alan	Birnbaum	National Park Service	1724 17th Street N. W. #71	Washington	DC	20009		charles_birnbaum@nps.gov
Edward	Burke	ROW Coalition	151 Park Drive #35	Boston	MA	02215	731-1341	edburke2@gis.net
Isabella M.	Callanan	Friends of the Muddy River	22 Bowker Street	Brookline	MA	02445	734-2741	muddyrvr@tiac.net
Suzanne	Comtois	c/o Fenway CDC	73 Hemenway Street	Boston	MA	02115	262-1046	
Christine	Cooper	Jamaica Pond Project	104 Childs Street	Jamaica Plain	MA	02130	522-6258	
Edward	Cutler		14 Monmouth Court	Brookline	MA	02446	738-0107	ebcutler@earthlink.net
Margaret	Dyson	Historic Massachusetts	45 School Street	Boston	MA	02108	723-3383	
Frances Allou	Gershwin	Mahoney Hawkes LLP	75 Park Plaza	Boston	MA	02116	457-3100	fgershwin@~~mhglaw.com~~
Alan	Goodman	The Abbey Group	575 Boylston Street	Boston	MA	02116	266-8860	algoo9328@AOL.com
George	Hagerty	Fenway Studios,Inc.	30 Ipswich, Studio 402 646 Central Street	Boston Stoughton	MA MA	02215 02072	247-3508 781-344-9564	ghagerty@mfa.org
June	Hatfield	Boston GreenSpace Alliance	638 Lewis Wharf	Boston	MA	02110	373-5214	*no e-mail address listed*
Richard	Heath		42 Bourne Street	Boston	MA	02130	522-7431 (H) 594-5795 (W)	*no e-mail address listed*
Gary R.	Hilderbrand	Reed Hilderbrand Associates, Inc.	741 Mount Auburn Street	Watertown	MA	02472	354-0554	gary@reedhilderbrand.com
Adam	Kahn	Brookline Conservation Commission	100 Craftsland Road	Chestnut Hill	MA	02467	730-4909	akahn@fhe.com
Frances J.	Kemp	Fenway Civic Association, Friends of the Muddy River, Fenway Resident	14 Clearway Street #7	Boston	MA	02115	266-7329	*no e-mail address*

Date: 6/22/01

Add to Tab #4 of the CAC Workbook

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

Directory of Members

C:\windows\TEMP\CAC Directory xls

Name		Affiliation	Street	City	State	Zip	Phone	E-mail
John	Leahy		156 I Street	So. Boston	MA	02127	464-2948	
Arleyn A.	Levee	National Assn. For Olmsted Parks	51 Stella Road	Belmont	MA	02478	489-1261	*no e-mail address listed*
Arlene	Mattison	Emerald Necklace Conservancy	209 Pond Avenue	Brookline	MA	02445	232-6083	abkm@aol.com
Hugh	Mattison	Friends of Leverett Pond	209 Pond Avenue	Brookline	MA	02445	232-6083	hmattison@aol.com
Lauren	Meier		39 Oak Avenue	Belmont	MA	02478-2172	484-3130	lauren_meier@nps.gov
Paul	Mentag	Fenway Alliance	337A Huntington Avenue	Boston	MA	02115	437-7544	pmentag@fenwayalliance.org
Jane	Pfister	Brookline Resident	31 Linden Street	Brookline	MA	02445		
George	Proakis	Boston Resident	PO Box 230600	Boston	MA	02123-0600	437-9882	george@fenmore.com
Marlon	Sabal	Fenway Garden Society	390 Commonwealth Avenue #411	Boston	MA	02215	437-7959	AJSABAL@worldnet.att.net
Roscoe	Sandlin		74 The Fenway	Boston	MA	02215	267-2520	RoscoeSan@AOL.com
Joyce	Starner	Symphony United Neighbors	7 Symphony Road	Boston	MA	02115	262-1773 (450-3612)	
Fredericka	Veikley	Fenway Civic Association	231 Park Drive #31	Boston	MA	02215	632-9472	fveikley@caregroup.harvard.edu
Eileen	Woodford	Nat'l Parks & Conservation Asn	35 Park Avenue	Cambridge	MA	02138	661-9624	ewoodford@npca.org

MEMORANDUM

DATE: June 19. 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

PLEASE NOTE MEETING LOCATION!

Monday, June 25, 2001

Northeastern University

Dodge Hall, Room 450 (4th floor)

Huntington Avenue (off the main quadrangle, next to the YMCA and the Green Line Station)

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topics: Draft Environmental Impact Report (DEIR) Review #10:
- Miscellaneous Topics (continued from June 20th meeting)
- Executive Summary/Vision Statement

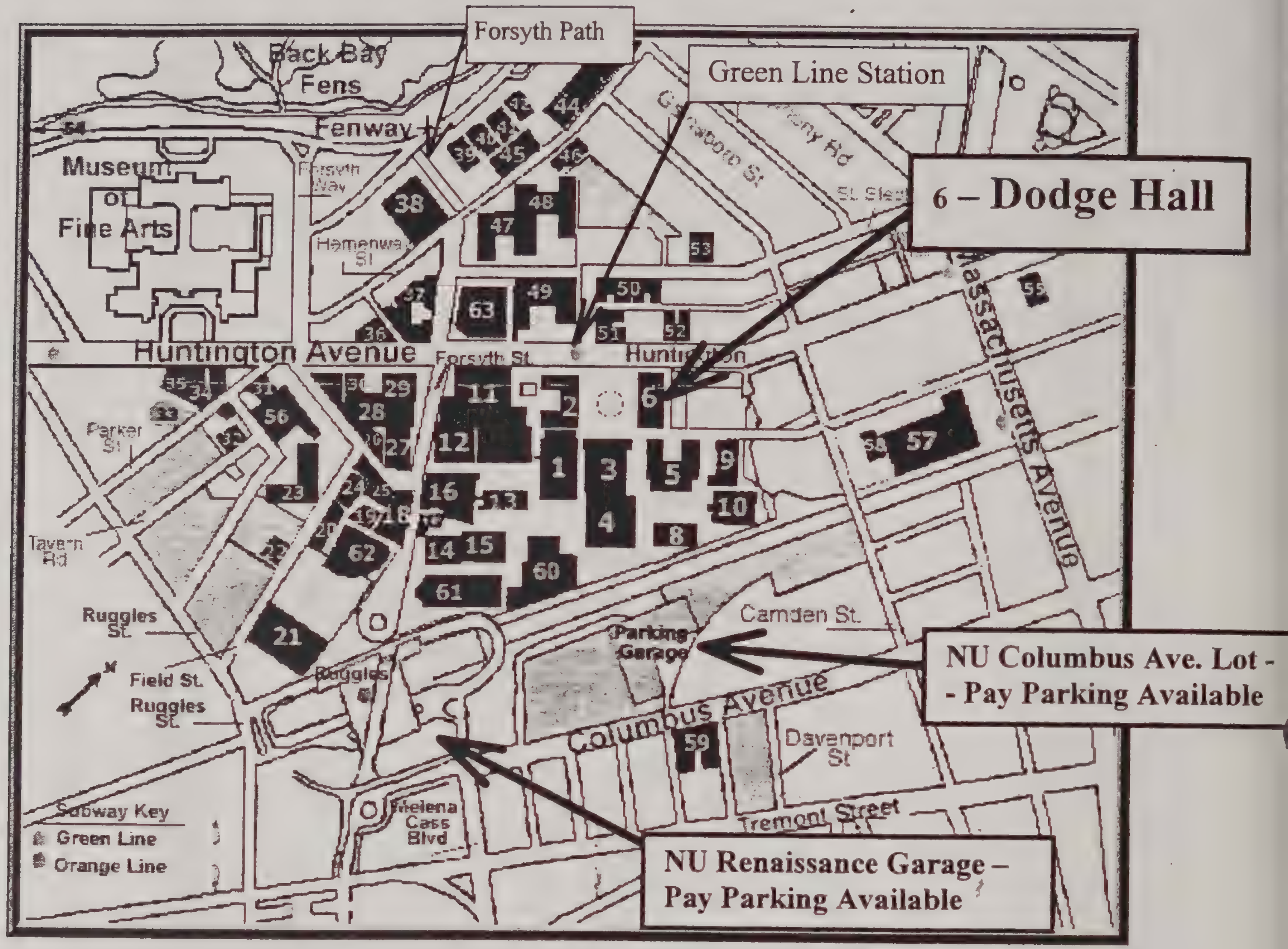
5:45 p.m.	Refreshments
6:00 p.m.	Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to

Dodge Hall -- Room 450

NORTHEASTERN UNIVERSITY CAMPUS



Forsyth Path

Green Line Station

6 – Dodge Hall

NU Columbus Ave. Lot -- Pay Parking Available

NU Renaissance Garage – Pay Parking Available

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to Huntington Avenue. Turn left on Huntington. Dodge Hall is on the main quad near the Green Line stop.

From Green Line (E Train):
Get off at Northeastern U. stop and walk across Huntington Avenue to the main quad. Dodge Hall is the building on the left as you enter the main quad.

From the Orange Line:
Exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

From the Parking Garages:
Columbus Ave. Garage: Cross the tracks on the footbridge and continue walking to the main quadrangle. Dodge Hall is to your right.
Renaissance Garage: walk through Ruggles MBTA Station and exit to Forsyth Street. Walk up to Huntington Avenue. Turn right. Dodge Hall is on the main quad near the Green Line stop.

BOSTON WATER AND SEWER COMMISSION

IMPROVEMENTS TO THE BACK BAY FENS GATE HOUSES

COMMUNITY MEETING

WEDNESDAY, JUNE 27, 2001
7:00 PM – 8:30 PM
NORTHEASTERN UNIVERSITY FACULTY CENTER
KERR HALL
96 THE FENWAY

GATE HOUSE NO. 1 WILL BE OPEN FOR VIEWING PRIOR TO THE MEETING AT 6:15 PM.

Boston Water and Sewer Commission staff will present preliminary recommendations for restoring the Back Bay Fens Gate Houses to maintain their structural and historical integrity and improve operations during wet weather events. Recommendations include preparing Gate House No. 2 for potential reuse by other organizations.

The Center is handicapped accessible.

If you have any special needs or other questions, please call Anthony Benedetti, Community Services Officer, at 617-989-7000.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Dodge Hall

Room 450

Monday, June 25, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
*John Burckardt, **P. E**, Project Manager*

II. Process Issues 6:15 - 6:30

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Notice of Project Change
- July 9 meeting ?

III. Review of Draft Comments: Funding 6:30 –7:00

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

IV. Discussion 7:00 – 8:20

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Management and Maintenance
  - Consultants – feedback on resume
  - Scope of work
- Feedback on Executive Summary
- CAC comment letter – in progress draft – Fran Gershwin

V. Next Meeting and other housekeeping 8:20 – 8:30

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Vision Statement

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – June 25, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager, Boston Parks and Recreation Department

II Process Issues

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Fran noted that Boston Water and Sewer Commission is cleaning Stony Brook, which will impact one hackberry tree. Arborists were sent to the site and confirmed that the hackberry tree is sick. The tree will be removed under the condition that all CAC members are contacted and three specimen oaks will be placed in the Back Bay. The construction is separate from the renovation of the Gate House.

- MODR completed a call to CAC members about the project change vote and a handout was distributed to members with the results: 13 members in favor, 4 members against the proposal and 3 members abstained. 7 members did not respond in time for the CAC meeting.

- Hugh expressed concern that public may not be aware of CAC meetings. He suggested that the public should have access to a project website with Meeting Minutes and especially the Executive Summary and Vision Statement. CAC agrees that there should be more publicity. A CAC member raised a question as to whether the public is invited to meetings and whether the local press is notified of meetings. John responded that he distributes each meeting notice to over 75 individuals, including the public, CAC members and officials from Boston, Brookline and the state. However, at present, the press is only notified regarding general public meetings, but not the current weekly CAC meetings. John will follow-up on this issue.

- Notice of Project Change – Whoever writes letter should include the statistics of the vote. MODR agreed to try to contact the remainder of the members.

- July 9th Meeting – CAC should authorize members who chose to attend Public Fenway Street Sweeping meeting to represent CAC. George will write a letter to be signed on behalf of the CAC members with an attached CAC member list.
- Fran is concerned that the Street Sweeping meeting will significantly impact the attendance of the CAC meeting on July 9th.
- ***CAC agrees to move the July 9th meeting to Tuesday, July 10. Please note that the meeting is on a Tuesday evening!***

III Review of Draft Comments: Funding

- Arlene – In reference to the June 20th Meeting Summary, she is concerned about how political support will be secured. She is also concerned about making recommendations to the Secretary without having secured funding. Bruce responded that document will identify and select several governance options, which will be presented as options for political support.
- Is there a long-term plan for securing management and maintenance money? MEPA has been unclear as to the amount of detail required for the long-term funding strategy. MEPA would like to see documentation of the funding options. Maintenance and management is not typically included in the MEPA process.
- Arlene suggests that the CAC make a recommendation to the Secretary based on funding levels. Consultants should advise CAC on this issue. UNRESOLVED.

IV Discussion

a) Feedback on the consultants resumes and scope of work:

- **The scope of work for one of the CAC consultants is being reviewed by the City of Brookline and will be mailed to CAC members at the end of the week.**
- Feedback on resumes – Go Fran Go!. Richard is concerned about the limited time frame for the consultants to analyze the maintenance and management section. He suggested that the maintenance plans should cover the whole Emerald Necklace. Fran has spoken with the consultants and has arranged for them to be available for focused work. **The CAC raised the question whether the Consultants will be principals for the content portion of the work.** Hugh – the consultants should agree to meet with the Emerald Necklace Conservancy about the project.

- Paul noted that the CAC needs to be clear on the model for the Consultants. Chapter 8 provides a good outline for this.

- Fran – **The CAC should self-select to meet the consultants for a meeting and site visit.**

- An explanation describing the need for training and a training budget will be included in the consultant's scope of work.

- Arlene requests the CAC to schedule a meeting with the Secretary to clarify issues in the MOU and the Secretary's definition of the Emerald Necklace. The CAC should compile a list of questions to ask the Secretary. Bruce responded **that the CAC is not writing a list of recommendations, but is writing a letter to the Proponents with comments on the DEIR, to which the Proponents are trying to respond and incorporate into the document. The CAC will be providing a letter of recommendation to the Secretary in the fall.**

- Isabella - Maintenance and Management plan should be separate so that the rest of the EIR can be approved. Paul - CAC needs to think strategically and focus on approving DEIR rather than asking for too much that may not be funded. Other members of CAC disagreed.

- Hugh – Requested that Fran email Draft Scope of Work and Funding to CAC.

- Fran Gershwin, the April 29, 1999 Certificate (page 11) states that DEIR should be addressing maintenance and management and funding.

b) Executive Summary Feedback:

- The comments are on the format and flavor of the Executive Summary

- The CAC commented that the document reads well, has attractive imagery, is a lot punchier, and written for the layman. The Executive Summary still needs some words-smithing.

- Arlene commented on the inconsistency of terms with the Legal Documents, including the MOU, ENF and Certificate. Fran responded that the Proponent will revisit language describing how the Muddy River restoration is a giant step forward for the Emerald Necklace Master Plan.

- **Proponent does not need to see CAC comments in narrative, paragraph form.** Bruce suggests **highlighting the important issues in the letter.**

- **The letter to the Proponents should identify larger global issues.** Fran wants concise documentation of comprehensive comments. **Richard will be re-writing the draft letter to make it appropriate for the Proponents as opposed to the Secretary. The letter is a means of a formal transmittal to the Proponents of the Meeting Summaries, which will be included as attachments.**

- **The CAC members wanted writers to review their Meeting Summaries one more time before they are attached to the letter for the Proponents. John will be sending emails to writers asking them to send their final edit of their Summaries to Fran Gershwin, who will compile them for attachment to the letter. fgershwin@mhglaw.com**

- **Any comments on Richard's Draft Letter should be sent to Fran Gershwin, as well as the 4 main points (from each CAC member's perspective, which Fran will compile into a list) to be included in the letter. Fran will send compiled comments to Richard for final revisions. Fran's email: fgershwin@mhglaw.com**

- Miscellaneous: Master Plan Appendix - Isabella commented that there have been significant changes in Master Plan editions and is concerned about the asphalt paths for cycling and jogging in the narrow part of the park.

- The Proponent is using Master Plan as a reference document.

- **Miscellaneous Appendices** – Arlene suggests that the third paragraph of the MOU be the first paragraph in the Existing Conditions section of the DEIR. "Whereas, the health, safety and quality of life ..."

V Next Meeting and Housekeeping

- Public Comment – has the CAC and the Proponent considered European models of restoration and maintenance?

- Paul Mentag is leaving the Fenway Alliance and moving onto a career of consulting. The Fenway Alliance will be making arrangements for sending a replacement.

Attachment 1

Emerald Necklace Citizens Advisory Committee
Meeting
June 25, 2001

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	Ed J Burke
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	Frances Allou Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	~~Douglas~~ Reed +Hilderbrand Landscape Arch.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Emerald Necklace Citizens Advisory Committee
Meeting
June 25, 2001

Sign-In She

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	
Lauren	Meier		
Paul	Mentag	Fenway Alliance	Paul J. Mentag
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

\\Anf-cbo.nts.1\MODR\Ex.Off. of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001.xls]CAC Members

Emerald Necklace Citizens Advisory Committee

Meeting

June 25, 2001

Sign-In Sheet

\Anf-cbo.nts 1\MODR\Ex.Off of Env Affairs\Emerald Necklace\[CAC Sign-in May 16, 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Amanda Griesbach	MODR	727-2224	
Kara Willis	Fort Point Assoc.	617 357-7044	
Claire Fluffy	95 Park Dr.	617. 266-1169	
John Burkhardt	c/o Bos. Parks	617-635 4505 x 6517	jburckardt @ci.boston.ma.us
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Fran Beatty	Bos Park		

Emerald Necklace Citizens Advisory Committee

Please Add to Tab # 6 of the CAC Workbook

Schedule of Meetings

Revised: 6/26/01

No.		Date	Topic(s)	Location
1	Wed.	29-Sep-1999	Introductions; slide presentation of park	96 The Fenway, NU Faculty Lounge
2	Tue.	26-Oct-1999	Dr. Charles Beveridge presentation; Master Plans	96 The Fenway, NU Faculty Lounge
3	Mon.	28-Feb-2000	J. Wickersham (MEPA): "Role of CAC" presentation; Introduce consultants; project overview	96 The Fenway, NU Faculty Lounge
4	Thur.	30-Mar-2000	Project Alternative Identification	Egan Center, NU
5	Tue.	16-May-2000	Best Management Practices	96 The Fenway, NU Faculty Lounge
6	Tue.	13-Jun-2000	Habitat/Rare Species	Egan Center, NU
7	Mon.	17-Jul-2000	Historic Resources	450 Dodge Hall, NU
8	Tue.	22-Aug-2000	Staging Areas; Pedestrian & Traffic Issues	Egan Center, NU
9	Tue.	19-Sep-2000	Culvert/Open Channel Alternatives	450 Dodge Hall, NU
10	Thur.	28-Sep-2000	Sediment Characterizations/Disposal	Egan Center, NU
11	Mon.	23-Oct-2000	Alternatives Evaluation	Egan Center, NU
12	Mon.	30-Oct-2000	Best Management Practices	Egan Center, NU
---	Wed.	08-Nov-2000	PUBLIC INFORMATION MEETING	Egan Center, NU
13	Wed.	15-Nov-2000	Mitigation	96 The Fenway, NU Faculty Lounge
14	Thur.	25-Jan-2001	Overview of Project Elements and Construction Cost Estimate	Egan Center, NU
15	Mon.	26-Feb-2001	Construction Cost Estimate (continuation of discussion) and Overview of Draft Environmental Impact Report outline	Egan Center, NU
16	Wed.	14-Mar-2001	Discussion of How the CAC will Review the Draft EIR	96 The Fenway, NU Faculty Lounge
17	Mon.	23-Apr-2001	CAC Review of DEIR: Topic #1--Vision Statement/Executive Summary	450 Dodge Hall, NU
18	Wed.	02-May-2001	CAC Review of DEIR: Topic #2--Project Alternatives	440 Egan Center, NU
19	Mon.	07-May-2001	CAC Review of DEIR: Topic #3--Project Description/Preferred Alternative	440 Egan Center, NU
20	Wed.	16-May-2001	CAC Review of DEIR: Topic #4--Project Impacts & Mitigation	440 Egan Center, NU
21	Mon.	21-May-2001	CAC Review of DEIR: Topic #5--Best Management Practices (BMPs)	450 Dodge Hall, NU
22	Wed.	30-May-2001	CAC Review of DEIR: BMPs (continuation of discussion)	96 The Fenway, NU Faculty Lounge
23	Mon.	04-Jun-2001	CAC Review of DEIR: Topic #6--Management & Maintenance Plan	450 Dodge Hall, NU
24	Wed.	13-Jun-2001	*CAC Review of DEIR: Topic #7--Project Funding*	96 The Fenway, NU Faculty Lounge
25	Wed.	20-Jun-2001	*CAC Review of DEIR: Topic #8--Misc. Topics*	440 Egan Center, NU
26	Mon.	25-Jun-2001	*CAC Review of DEIR: Review of Executive Summary & Wrap-up*	450 Dodge Hall, NU
27	**Tue.**	**10-Jul-2001**	***CAC Review of DEIR: Additional Meeting time***	***to be determined***
28	**Wed.**	**18-Jul-2001**	***CAC Review of DEIR: Additional Meeting time (if needed)***	**440 Egan Center, NU**

Emerald Necklace Project Change Vote
June 25, 2001

In Favor of the Proposal	Against the Proposal	Abstention
Kathy Baskin	Freddie Viekley	Gary Hilderbrand
Ed Cutler	Hugh Mattison	Margaret Dyson
Isabella Callanan	Edward Burke	Lauren Meier
Suzanne Comtois	Arlene Mattison	
Christine Cooper		
Fran Gershwin		
June Hatfield		
Richard Heath		
Adam Kahn		
Frances Kemp		
Paul Metag		
George Proakis		
Marion Sabal		

Totals
13 CAC members in favor of the Proposal
4 CAC members against the Proposal
3 CAC members abstained

- I was unable to contact two members since no phone number was listed. I left messages and did not hear back from 5 members.

Survey conducted by Amanda Griesbach, ADR Program Coordinator, Massachusetts Office of Dispute Resolution.

MEMORANDUM

DATE: July 3, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

PLEASE NOTE MEETING LOCATION!

Tuesday, July 10, 2001

Northeastern University
Egan Engineering /Science Research Center
Forsyth Street (next to Ruggles Station)
Room 440 (4th Floor)

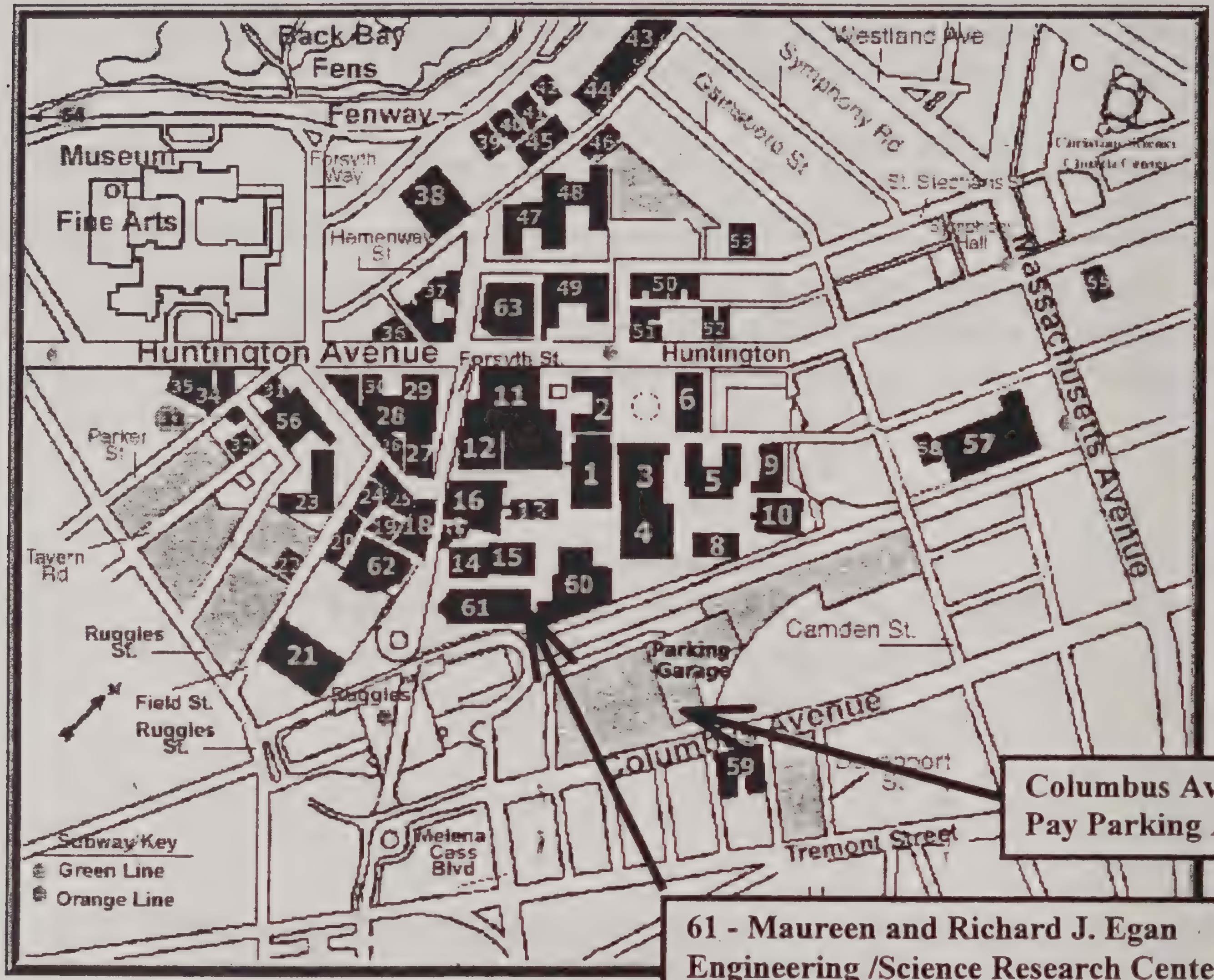
~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topics: Draft Environmental Impact Report (DEIR) Review #11:
- Review of Vision Statement
- CAC Comment Summary Letter
- Scope for Management & Maintenance Consultant

5:45 p.m.	Refreshments
6:00 p.m.	Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to
Maureen and Richard J. Egan Engineering /Science Research Center
Room 440 – 4th Floor
NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot – Pay Parking Available

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

MEMORANDUM

DATE: June 27, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: Upcoming Meeting Schedule; Other Information

Schedule of Upcoming Meetings

No.	Day	Date	Time	Topic(s)	Location
27	**Tues.**	**10-Jul-2001**	**6 PM**	**CAC Review of DEIR #11:** ☐ **Review of Vision Statement** ☐ **Scope for Management & Maintenance Consultant** ☐ **CAC Comment Summary Letter**	***to be determined***
27	Wed.	18-Julr-2001	6 PM	CAC Review of DEIR #12: ☐ Management & Maintenance update ☐ CAC Comment Summary Letter	440 Egan, Northeastern University

Note: Additional CAC Meetings will be scheduled at these upcoming meetings.

5:45 p.m. Refreshments
6:00 p.m. Presentation & Discussion
8:30 p.m. Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Enclosures:

1. Revised Draft of **Project Vision Statement**
Please review and bring comments to the July 10th meeting.
2. In-Progress DRAFT – **Scope for Management/Maintenance & Operations Plan** for Emerald Necklace Landscape
Please review and bring comments to the July 10th meeting.
3. Memorandum to CAC regarding the CAC's Comment Letter to the Project Proponents

Note:
If you cannot attend the July 10th meeting, but would like to submit comments, please e-mail, fax or mail questions or comments to John Burckardt c/o Boston Parks & Recreation prior to ***July 9th****:*

e-mail: jburckardt@ci.boston.ma.us *fax:* *(617) 635-3256*
mail: *1010 Massachusetts Avenue, 3rd floor, Boston, MA 02118*

MUDDY RIVER REHABILITATION
EMERALD NECKLACE
BOSTON AND BROOKLINE, MASSACHUSETTS

VISION STATEMENT

The Emerald Necklace is an internationally renowned 19th-century linear park system and a nationally significant work of landscape architecture, sanitary engineering, and city planning. Frederick Law Olmsted Sr., the leading landscape architect of that era, created these public spaces to solve a difficult series of public health and civil engineering problems and provide verdant scenery to "bring peace and refreshment to the city dweller". The spine of the Emerald Necklace, the Muddy River, a 3.5-mile linear system, integrates glades, dells, sweeping vistas, reflecting pools, the Babbling Brook, bike paths, walkways, tree-lined parkways, shorelines and "beaches". This unified system of linked parks is one of the most uniquely designed historic urban waterways in the nation. The challenge today is to achieve a balance between historic landscape preservation principles, resource protection regulations, public safety measures and modern engineering practices.

As a result of changes in land use patterns associated with urbanization, both the engineering and the artistry of Olmsted's creation are in need of renovation. The most serious issue is the presently diminished flood handling capacity of the park system as evidenced by the damage caused by two recent storms that brought civic leaders, politicians, and community groups together to reexamine the condition of this natural treasure and its importance to the metropolitan area. With increasing regularity, moderate rains necessitate emergency response measures to address storm water overflow in Fenway colleges and universities, Longwood medical institutions, numerous Brookline businesses and residences and the public transit facilities. The commitment of political will associated with health, safety and ecological improvements to Olmsted's municipal masterwork has inspired a multi-jurisdictional park and public works project to restore the Muddy River's civil engineering structure, flood-carrying capacity, historic integrity, bucolic scenery and ecological vitality.

The Muddy River Rehabilitation project is one of the most ambitious and comprehensive landscape preservation projects in the nation. The vision set forth for recovering Olmsted's original concept of a unified system of linked parks is designed to protect the health, safety and welfare of the citizens, re-establish the Olmsted scenery to approach its former glory, and reinvigorate the overall park experience for the benefit of everyone in the community.

The project, which includes improvements to infrastructure, dredging sediment, removing invasive species, rehabilitating and restoring wetland habitats and historic resources addresses the predominant stresses that currently undermine the park system. Invasive exotic vegetation has overtaken large areas of the river and its banks. Over five acres of mature *Phragmites* (a tall invasive reed grass) choke the river and diminish the flood-carrying capacity of the waterway. The reeds have displaced other plant species and undermine biodiversity. Contaminants in the river sediment continue to degrade water quality, limiting the number of vertebrate and invertebrate species that could contribute to a balanced ecology. The Muddy River Rehabilitation will correct major issues of physical deterioration, public safety hazards and address critical public needs.

The collaboration process that created the rehabilitation project remains as important as the project itself. Over the past 12 years the municipalities have been implementing park improvements using the framework of the Massachusetts Department of Environmental Management's 1990 *Emerald Necklace Master Plan.* . The project vision exemplifies a renewed appreciation of the Emerald Necklace and reinforced political will to commit resources to rehabilitate a world-class park system. Coordinated maintenance and management can successfully reclaim many areas. The municipalities are committed to exploring new and innovative ways to maintain the parks in perpetuity, and protect and preserve the public sector's investment. Boston and Brookline will aggressively pursue partnerships with private sector and cultural institutions, and examine fiscal and organizational models that could enhance park maintenance and management practices. A Memorandum of Understanding (MOU) signed in 1999 by local and state agencies institutionalizes the commitment of collaboration and cooperation amongst the respective authorities in project planning, permitting, funding, and implementation.

One hundred years ago, Olmsted believed that nature could restore the human mind and spirit and conceived the unique urban landscape called the Emerald Necklace to bring a natural regenerative experience to city dwellers. Like their 19th century predecessors, today's civic leaders, politicians, and citizens must commit to stewardship for future generations, and sustain a legacy worthy of Olmsted and his peers. Across the country, Olmsted has left millions of urban residents some of this country's greatest treasures. Our citizens and their elected officials have come together in an exceptional effort to protect those treasures for the next generations.

DRAFT – FOR DISCUSSION

MANAGEMENT/MAINTENANCE & OPERATIONS PLAN FOR EMERALD NECKLACE LANDSCAPE - DRAFT

SCOPE OF WORK

ETM Associates, L.L.C. (ETM) will develop a Draft Management Plan for the Emerald Necklace Landscape (Project Area). ETM will with the Consulting Group and or Citizens Advisory Committee (Working Group) on all work steps identified below. The Working group and ETM will meet with the Advisory Committee at milestones for review and guidance.

The Plan will include:

- Recommendations for the maintenance and operation of the Emerald Necklace Landscape
- Recommendations governing the relationship between the City of Boston, Town of Brookline, and Commonwealth of Massachusetts as it relates to the maintenance and management of the Emerald Necklace
- Supporting Analyses.

Work Steps

1.0 Reconnaissance

During the reconnaissance phase, ETM will become familiar with the physical characteristics and management system of the Project Area, and will review previous and current designs, studies, contracts and agreements governing the management of the Project Area, and other relevant background materials. ETM will interview State and City Parks about the physical area under their control, responsibilities, concerns, standards and practices. Current and future contractual and other understandings about who is responsible for what will be mapped.

2.0 Classify Physical Areas

All the physical areas in the Park will be grouped into four or five major categories. For example:

- Open, Natural Areas - unpaved areas including meadows, woodlands, parkland, and lawn;
- Horticultural Areas - planted areas, beds
- Paved areas - Open to the elements, but covered by a man-made surface, including parking lots, playgrounds, pathways, etc.
- Structures - Enclosed or partially enclosed areas (buildings or shelters) or other man-made three-dimensional entities (e.g. sculpture)
- Furniture - Water fountains, fencing, lights, benches, trashcans, etc.
- Water Bodies

3.0 Divide the Park into Sectors

The Project Area will be divided into major areas - taking into account current responsibilities and the physical settings.

4.0 Estimate Usage

Using a combination of hard data and anecdotal information, of the number of visits to the major sectors of the Park by season will be estimated, taking into account the weekday and holiday/weekend cycle.

5.0 Define Seasons for the Park

Divide the year into seasons (not necessarily of equal length), taking into account weather, growing season and usage (including special events).

6.0 Estimate Work-Hours Needed to Maintain & Operate the Park

Classify Tasks - all tasks performed in the park will be grouped into three or four major categories and landscape type. For example:

- Cleaning - work having to do with the appearance of the park and sanitary conditions in the Park, including litter pick-up and comfort station cleaning;

- Landscape work - horticulture and other work related to maintaining and enhancing the health and beauty of natural areas in the park;
- Repair & preservation - work having to do with the proper functioning and safety of park equipment and facilities; including renovation, and preventative maintenance (e.g. bench painting and repair or graffiti removal);
- Operations - work related to the use of facilities and equipment in the Park - often seasonal or special-event related;

Establish standards
For each type of work task and physical area, standards of frequency and length of time per unit (e.g. minutes to mow an acre) will be established using the standards in use in the Park and other developed standards.

Estimate Work Load
The hours of work needed to maintain the Park will be estimate, annually, by season, by sector and landscape type. In addition, hours needed to attain desired standards and the additional hours needed after current and future capital improvements are completed will also be estimated.

7.0 Estimate Hours Available to Maintain and Operate the Park

Summarize the current staffing for maintenance and operations.

Estimate the Number of Productive Hours Available for Maintenance and Operations in the Park: Taking into account the number of personnel assigned to the Project Area, vacation, holidays, lost time and non-productive time, estimate the number of hours available for maintenance and operations. Estimate the hours available for personnel not regularly assigned to the Park.

8.0 Summarize and Analyze the Gap Between Needed Hours and Available Hours.

9.0 Analyze Concerns and Behavior of Park Users as this Impacts Maintenance

How people behave in a Park can have a major impact on workload. A focus group or forum of Park users and Park workers will be convened to discuss how the Park can be made more user-friendly and how users can be educated to be more responsible Park users.

10.0 Develop Strategic Recommendations for Closing the Gap

Identify possible workload reductions and productivity improvements (including equipment options).

Identify Improvement opportunities related to park users including better communications and public information.

Identify additional revenue opportunities.

Identify maintenance and operations priorities.

11.0 Analyze the Management of the Park
With several different entities responsible for carrying out and/or funding maintenance in the Park, develop best possible management structure for coordination and integration of work in the Park.

12.0 Analyze Division of Tasks in Maintaining and Operating the Park

13.0 Develop Draft Management and Maintenance Plan
Develop a draft plan with key management and maintenance recommendations for presentation to the CAC for discussion and comment:

- Staff organization and projected staffing levels - current and future;
- Draft maintenance standards;
- Estimated annual operating budget(s);
- Maintenance workspace and storage facilities;
- Draft Operations plan;
- Vehicle recommendations and storage;
- Small equipment needs;
- Site furnishings recommendations;

14.0 Develop Estimated Operating Budget(s)

15.0 Review Plan with Key Decision-Makers

A detailed outline of the plan and its recommendations will be presented to key decision-makers for discussion and suggestions for improvements.

16.0 Preparation and Submission of Final Plan

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Egan Engineering/Science Research Center

Room 440 – 4th Floor

Tuesday, July 10, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received — 6:00 - 6:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
*John Burckardt, **P. E**, Project Manager*

II. Process Issues — 6:15 - 6:30

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

III. Review of Vision Statement — 6:30 –7:00

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

IV. Discussion — 7:00 – 8:20

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Management and Maintenance
  - Scope of work for consultant
- CAC Comment Letter to Proponents
- Other

V. Next Meeting — 8:20 – 8:30

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – July 10, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager, Boston Parks and Recreation Department

- John looked into the possibility of a CAC website. Text would be viable.
- Hugh suggested that Brookline has the resources available to integrate a CAC website.
- **This is Fran's last CAC meeting.**
- John B. introduced of Ann Blair, Brookline Landscape Architect.
- Arlene requested that the Draft Executive Summary be revised as soon as possible.
- **George wrote a letter on behalf of the CAC regarding the Fenway Street Sweeping, which he will forward to John for distribution to the CAC members.**
- **Corrections to June 25th meeting summary notes (and the DEIR) were suggested by Arlene: clarification of the extent, scope and definition of this rehabilitation project and how it relates to the overall Emerald Necklace. There is a discrepancy between the chart and the narrative in the revised draft Executive Summary.**
- **Arlene requests this to be inserted into last weeks meeting minutes: "As described in the project notification form.... along the Muddy River and in the Emerald Necklace parks in Boston and Brookline (Volume 7, Appendix J, April 29th Certificate, Project Description)."**
- **Hugh reiterates a previous request for a glossary of terms.**

II Process Issues/Organization

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Jane will facilitate the remainder of the CAC meetings. Jane can be reached at MODR at 617-727-2224 x 21172 and email: jane.wells@state.ma.us

III Review of Vision Statement

- The Vision Statement has been revised based on comments from the CAC with input from Erin Chute and Fran. Bruce requests specific comments.
- The third paragraph should start out, "this document focuses on a portion of the Emerald Necklace" and the boundaries need to be clearly described.
- Need to determine whether this project is restoration, preservation, rehabilitation, recovery, etc. Richard stressed that rehabilitation is the most accurate term.
- Arleyn asked whether the Certificate is written for the $92 million project or for something else. Need to be clear.
- June proposed revisions, which she provided to Bruce.
- The Vision Statement will be the first section of the Executive Summary.
- George offered an example from Arleyn's "The Art of the Emerald Necklace" (presented at the Museum of Fine Arts), portions of which could be used to enhance the Vision Statement.

IV Discussion

Management and Maintenance – Scope of Work for Consultant

- Richard requested clarification on the scope of the maintenance and management budget. Fran responded that the scope is Wards Pond to Back Bay Fens, which parallels the DEIR. The budget is still being worked out, depending on the final scope of work for the consultant.
- The MDC should be added under the second bullet under the Scope of Work.
- Richard asked if Parsons is arranging an open-ended contract with the consultants. Fran responded that payment will be authorized in pieces. They will authorize first $5,000 and negotiate subsequent compensation.
- The consultant understands and is comfortable with the time frame of the project. There are other consultants that could be considered as a fallback if needed.
- A scope of work has not yet been developed for Clarissa Rowe, who is the other consultant being considered.

- A CAC member asked how the DEIR can be so limited if the Certificate isn't? Bruce responded that the ENF specified 5 pieces. The Emerald Necklace Master Plan is the long-range encompassing plan. The Muddy River project makes allowances for future pieces to be rehabilitated.

- George suggested that after Muddy River, the boundaries of the project should be included in parentheses – Wards Pond to Back Bay Fens, so the public is clear that this project is just a part of the Emerald Necklace Master Plan.

- The consultant scope of work needs to include an evaluation of current practices, because it would be difficult to make future recommendations without evaluating the current practices.

- There has been much discussion about an independent management structure, separate from Boston Parks, as one of the possible solutions for the maintenance and management piece of the DEIR. CAC would like the consultant to consider this in their analysis.

- Hugh wants to see recommendations on resource sharing from the consultant and a site visit with CAC members and advocates from each park.

- Section 1.0 – Interview Staff and Personnel, as well as State and City Parks.

- Section 4.0 – User Survey should be included.

- Section 6.0 – Change title to Hours Needed to Maintain and Operate the Park Using Historic Landscape Practices. Also add "quantifying areas and equipment now used"

- Section 7.0 – Need to add training.

- Section 10.0 – Include tasks that could be assigned to volunteer groups and a coordinator for supervision and training of volunteer groups.

- Section 12.0 – Discuss jurisdictional issues between Boston, Brookline, etc.

- Section 13.0 – Add staff training and composition of work force.

- Section 15.0 - Add "including CAC" after decision makers.

- Richard asked who will supervise the consultant. Fran responded that John B. will supervise, with Stan Ivan, Chief Engineer of Boston Parks and Bernie Lynch, Chief of Maintenance of Boston Parks.

- What is the minimal amount of dollars that we can get by on to maintain the parks?

CAC comment letter to Proponents

- Fran Gershwin has been working to identify four to five key areas and to incorporate copies of 8 summary comments on various parts of the DEIR.
- CAC needs to review Richard's draft letter. Arlene's and Hugh's emails, containing key points, were distributed to CAC.
- CAC intends to have a final version of the Letter for next week's meeting.
- **Richard and Fran Gershwin will sign the comment letter on behalf of the entire CAC.**
- **The goal is to have a draft letter, with the eight summary comments, distributed to CAC on Monday via email by Fran Gershwin.**
- Arlene raised concern that issues raised after funding meeting have not been included in the meeting summaries, such as the parking lot issues. **Therefore, the parking lot issues need to be included in the letter to the proponents.**

VI Next Week's Agenda and Other Housekeeping

- CAC should email or phone John Burckardt if they are interested in participating in the site visit with the consultants and include 3 possible dates between the last few weeks in July and first few weeks of August. Lauren, Isabella and Gary Hilderbrand were suggested as candidates for the site visit. Ed Burke volunteered. **John will send out an email to CAC members who were requested to attend site visit.**
- Arleyn suggested that Charles Beveridge, historic consultant in D.C., would offer valuable insights. Arlene suggests that Arleyn have a conversation with him and determine when and how to involve him in the process.
- The scope of work for this consultant focuses on maintenance and management and therefore people like Ed and Hugh, who know current maintenance practices, should be involved. Arleyn stressed the importance of the historical context of the park, with regards to management and maintenance.
- Hugh stated that the Scope of Work for the consultant should be sent out to CAC members who were not in attendance at this meeting, even though the scope is on going. John B. will distribute revised scope to consultant, proponents and CAC.
- **The next meeting is Wednesday, July 18th.**

Attachment I

Emerald Necklace Citizens Advisory Committee
Meeting
July 10 01

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	Ed Burke
Isabella M.	Callanan	Friends of the Muddy River	
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	ED Cutler
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	
Alan	Goodman	The Abbey Group	Frances Allou Gershwin
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		Richard Heath
Gary R.	Hilderbrand	Reed Hilderbrand Associates, Inc	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

July 10/01

Sign-In She

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		
Paul	Mentag	Fenway Alliance	
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Bruce Conklin CDM 617-452 6543

Ann Blair Brookline

[illegible] 95 Park Dr 617 [illegible] 1169

John Burckardt c/o Boston Parks 617-635 4505

Amanda Griesbach. MODR 617-737-2224

Jane Wells, MODR 617-737-2224

Vara [illegible] [illegible]

MEMORANDUM

DATE: July 12, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration
Fran Beatty, Sr. Landscape Architect for Historic Parks

RE: **Meeting Notice**

IMPORTANT MEETING TOPIC

Management & Maintenance Plan

Meeting with Tim Marshall, ETM Associates

Wednesday, July 18, 2001

Northeastern University
Egan Engineering /Science Research Center
Forsyth Street (next to Ruggles Station)
Room 440 (4th Floor)

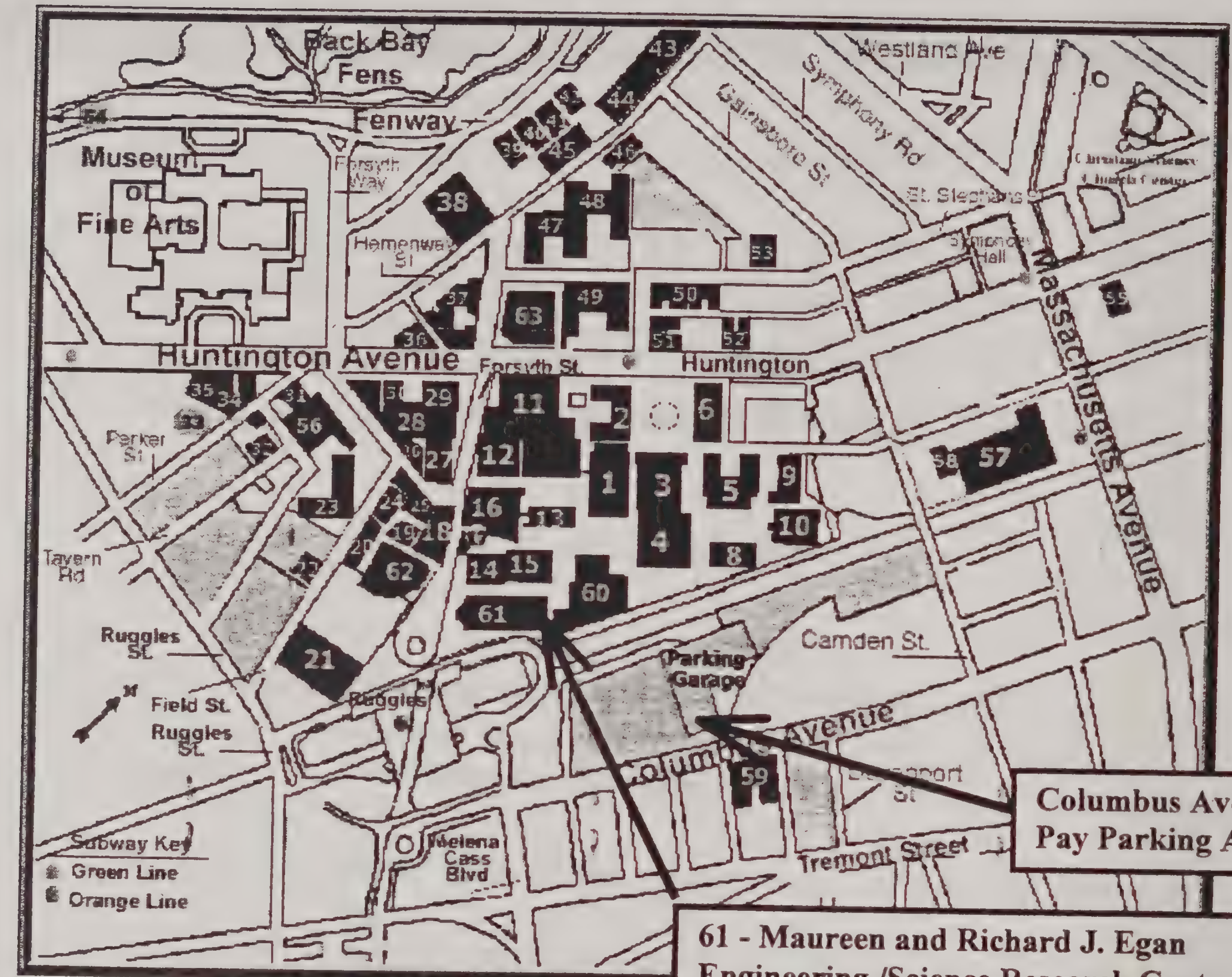
~ ~ ~ ~ ~ ~ See Map on Back! ~ ~ ~ ~ ~ ~

Meeting will start promptly at 6 PM!

5:45 p.m.	Refreshments
6:00 p.m.	Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to
Maureen and Richard J. Egan Engineering /Science Research Center
Room 440 – 4th Floor
NORTHEASTERN UNIVERSITY CAMPUS



Columbus Ave. Lot – Pay Parking Available

61 - Maureen and Richard J. Egan Engineering /Science Research Center

From The Fenway (walking):
Cut through Forsyth Path and cross Hemenway Street. Follow Forsyth St. to end. Egan Center is on left just before Ruggles Station.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Left on Forsyth St. and walk to end. Egan Center is on left just before Ruggles Station.

From the Orange Line:
Egan Center is next to Ruggles Station.

Emerald Necklace Citizen's Advisory Committee

Northeastern University - Egan Center

Room 440

Wednesday, July 18, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator
*John Burckardt, **P. E**, Project Manager*

II. Discussion with Tim Marshall, Consultant 6:15 – 7:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Scope of Work

III. Discussion 7:15-8:20

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Site Visit
- Definition of Project Limit
- Next Meeting Date

IV. Other Housekeeping 8:20 – 8:30

MEMORANDUM

Date: July 12, 2001

To: Emerald Necklace Citizens Advisory Committee

From: John Burckardt, Project Manager for Muddy River Restoration

RE: Draft Scope – Management and Maintenance

Copy: Fran Beatty-Boston; Erin Chute-Brookline; Tom Brady-Brookline;
Samantha Overton-MDC; Tim Marshall-ETM

I have revised the draft scope in accordance with comments received from the CAC at the meeting on July 10th. Most CAC comments are included. (The CAC comments from the 7/10 meeting are included in the Meeting Summary, which will be mailed to the CAC separately.) In the case of some comments that were very specific (e.g., use of user surveys, evaluation of existing practices), I believe that the methods used should be left to Tim based on his experience and need not be articulated in the scope. I believe that the scope should focus on the end products of his work. Other comments (quantify park areas and identify equipment and methods) are already in the scope. The scope is in the process of negotiations and all these issues can be discussed further with Tim at the next meeting on July 18th.

MANAGEMENT/MAINTENANCE & OPERATIONS PLAN FOR the Portion of the EMERALD NECKLACE LANDSCAPE from Wards Pond to Charlesgate – DRAFT

SCOPE OF WORK

ETM Associates, L.L.C. (ETM) will develop a Draft Management Plan for the ~~Emerald Necklace~~Wards Pond to Charlesgate Landscape (Project Area),consisting of approximately 200 acres. ETM will with the ~~Consulting Group~~Project Proponents (Boston and Brookline), and or Citizens Advisory Committee (~~Working Group~~CAC) on all work steps identified below. The ~~Working group~~project proponents and ETM will meet with the ~~Advisory Committee~~CAC at milestones for review and guidance:

--Kickoff Meeting
--Site Walk
--Follow-up Presentation on Draft Management & Maintenance Plan.

The Plan will include:

- Recommendations for the maintenance and operation of the ~~Emerald Necklace~~ Landscape between Wards Pond and Charlesgate
- Recommendations governing the relationship between the City of Boston, Town of Brookline, Metropolitan District Commission (MDC), and Commonwealth of Massachusetts as it relates to the maintenance and management of the Emerald Necklace
- Supporting Analyses.

Work Steps

1.0 Reconnaissance

During the reconnaissance phase, ETM will become familiar with the physical characteristics and management system of the Project Area, and will review previous and current designs, studies, contracts and agreements governing the management of the Project Area, and other relevant background materials. ETM will interview ~~State and City Parks~~ Boston, Brookline, and MDC parks staff and personnel about the physical area under their control, responsibilities, concerns, standards and practices. Current and future contractual and other understandings about who is responsible for what will be mapped.

2.0 Classify Physical Areas

All the physical areas in the Park will be grouped into four or five major categories. For example:

- Open, Natural Areas - unpaved areas including meadows, woodlands, parkland, and lawn;
- Horticultural Areas - planted areas, beds
- Paved areas - Open to the elements, but covered by a man-made surface, including parking lots, playgrounds, pathways, etc.
- Structures - Enclosed or partially enclosed areas (buildings or shelters) or other man-made three-dimensional entities (e.g. sculpture)
- Furniture - Water fountains, fencing, lights, benches, trashcans, etc.
- Water Bodies

3.0 Divide the Park into Sectors

The Project Area will be divided into major areas - taking into account current responsibilities and the physical settings.

4.0 Estimate Usage

Using a combination of hard data and anecdotal information, of the number of visits to the major sectors of the Park by season will be estimated, taking into account the weekday and holiday/weekend cycle.

5.0 Define Seasons for the Park

Divide the year into seasons (not necessarily of equal length), taking into account weather, growing season and usage (including special events).

6.0 Estimate Work-Hours Needed to Maintain & Operate the Park

Classify Tasks - all tasks performed in the park will be grouped into three or four major categories and landscape type. For example:

- Cleaning – work having to do with the appearance of the park and sanitary conditions in the Park, including litter pick-up and comfort station cleaning;
- Landscape work – horticulture and other work related to maintaining and enhancing the health and beauty of natural areas in the park;
- Repair & preservation – work having to do with the proper functioning and safety of park equipment and facilities; including renovation, and preventative maintenance (e.g. bench painting and repair or graffiti removal);
- Operations – work related to the use of facilities and equipment in the Park – often seasonal or special-event related;

Establish standards
For each type of work task and physical area, standards of frequency and length of time per unit (e.g. minutes to mow an acre) will be established using the standards in use in the Park and other developed standards.

Estimate Work Load
The hours of work needed to maintain the Park will be estimate, annually, by season, by sector and landscape type. In addition, hours needed to attain desired standards and the additional hours needed after current and future capital improvements are completed will also be estimated.

7.0 Estimate Hours Available to Maintain and Operate the Park

Summarize the current staffing for maintenance and operations.

Estimate the Number of Productive Hours Available for Maintenance and Operations in the Park: Taking into account the number of personnel assigned to the Project Area, vacation, holidays, lost time and non-productive time, estimate the number of hours available for maintenance and operations. Estimate the hours available for personnel not regularly assigned to the Park.

8.0 Summarize and Analyze the Gap Between Needed Hours and Available Hours.

9.0 Analyze Concerns and Behavior of Park Users as this Impacts Maintenance

How people behave in a Park can have a major impact on workload. A focus group or forum of Park users and Park workers will be convened to discuss how the Park can be made more user-friendly and how users can be educated to be more responsible Park users.

10.0 Develop Strategic Recommendations for Closing the Gap

Identify possible workload reductions and productivity improvements (including equipment options).

Identify Improvement opportunities related to park users including better communications and public information.

Identify tasks that could be assigned to volunteer groups. Address the issue of supervision of volunteers.

Identify additional revenue opportunities.

Identify maintenance and operations priorities.

11.0 Analyze the Management of the Park
With several different entities responsible for carrying out and/or funding maintenance in the Park, develop best possible management structure for coordination and integration of work in the Park.

12.0 Analyze Division of Tasks in Maintaining and Operating the Park

Discuss jurisdictional issues.

13.0 Develop Draft Management and Maintenance Plan
Develop a draft plan with key management and maintenance recommendations for presentation to the CAC for discussion and comment:

- Staff organization and projected staffing levels - current and future;
- Draft maintenance standards;
- Staff training
- Estimated annual operating budget(s);
- Maintenance workspace and storage facilities;
- Draft Operations plan;
- Vehicle recommendations and storage;
- Small equipment needs;
- Site furnishings recommendations;

14.0 Develop Estimated Operating Budget(s)

15.0 Review Plan with Key Decision-Makers

A detailed outline of the plan and its recommendations will be presented to key decision-makers for discussion and suggestions for improvements.

16.0 Preparation and Submission of Final Plan

E-Mail Message

From: Rome, Laura (ENV) [Laura.Rome@state.ma.us]
Sent: Monday, July 16, 2001 3:50 PM
To: John Burckardt (E-mail)
Cc: ShureGross, Betsy (ENV); Wells, Jane (MODR)
Subject: Project Area

John,

I hope that this will answer your question.

The site boundaries for the entire Emerald Necklace run from curb-to-curb from Charlesgate to Franklin Park plus the MDC parkways. This is the project for which the Secretary established the CAC.

The portion of the project currently undergoing MEPA review is Phase 1 of that larger project and runs Charlesgate to Jamaica Pond and includes

(1) the river itself,
(2) any place along the river, between the river and the parkways, that is disturbed by the project, and
(3) any aspect of the parkways that has an impact on the river.

Give me a shout at 617-626-1030 if you need anything else.

Thanks.

==============================

Laura Rome
MEPA Office
Executive Office of Environmental Affairs
251 Causeway Street, Suite 900, Boston, MA 02114
Phone: 617-626-1030; Fax 617-626-1181

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – July 18, 2001 CAC Meeting

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Amanda Griesbach, MA Office of Dispute Resolution, CAC Facilitator

John Burckardt, P.E., Project Manager, Boston Parks and Recreation Department

- Fran B. could not attend the meeting.
- Charles Beveridge attended the meeting. He noted that maintenance and management practices, like historical landscape architecture, reflect on the aesthetics of the park. He noted that a document was written in Louisville that contained information easily accessible that was important to the park staff on the historical landscape issues in the park.
- In accordance to the practice that Meeting Summaries are not amended and re-issued, but that written comments are distributed to the CAC and added to the file, Isabella's comments on the issue of bike/jogging paths mentioned at the June 25 CAC meeting, which needed further clarification, are attached to these meeting notes.

II Discussion with Tim Marshall, Consultant

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

- Tim Marshall introduced himself, highlighting his background and experience. He "cut his teeth" in Central Park. He has worked with restoration crews, graffiti crews and on the Bronx conservation. He went on to oversee design and construction projects for the Conservancy. He became the Deputy Administrator for Central Park, which included all facets of running and maintaining the park. Central Park illustrates an excellent public/private partnership, but this took years to develop. After 14 years with Central Park, he formed his own business, focusing on public spaces – design, use and maintenance. Important elements are resources, opportunities, constraints, historical aspects and ensuring that solutions can be implemented. With the scope of work, Tim felt that the key components were: training of park staff, volunteers, jurisdictional issues, and standards, both aesthetics and performance).

Questions and Comments from CAC addressed to Tim Marshall, the consultant

- Arlene – Not the first time that there has been an analysis of maintenance and management. She agrees that a plan must be "do-able."
- Tim – There is always a gap between resources and what needs to be accomplished. The challenge is how to close that gap and how to use resources in a more efficient, different way.
- Arleyn – You had a unique experience of having an administrator dedicated to the park. How do you see coordination of the multi-jurisdictions of this park in terms of management? By city, interest, type, etc? Different sides of the river get maintained differently.
- Tim – He will be looking at the park as one entity. Standards will need to be applied to the whole park.
- Arleyn – You had an advantage at Central Park having an administrator for the whole park.
- Tim – It took a long time, about 10 years, for the administrator to build relationships and have enough "teeth." The conservancy model is not for every park and he would not pre-suppose that this is the best model for Emerald Necklace.
- Arlene – There are three agencies for equipment, staffing, etc.
- Tim – He noted that he understood the difficulty with multi-jurisdictions, and reiterated the importance of applying standards to the whole park.
- George H. – Will the product of the plan, work with or without an administrator, or will the plan suggest building something new. CAC has consistently been concerned about the need for a new form of management.
- Tim – He noted that he understood the importance of the "balkanization" of the park.
- George H. – He is concerned about the Maintenance and Management for new improvements that will be made. There is gap funding for existing and need new funding for the new improvements.
- Mr. Beveridge – Will you be doing the work yourself or do you have a team?

- Tim – He has a small firm with two associates. "If you hire me, you should get me." He started his own business so that he could do the actual work himself. However, he will use associates for mapping and other work. If he needs to get someone on board who has a specific expertise needed, he will do so.

- June – Sustainability is important.

- Tim – He noted that the restore and decline cycle needs to be broken, with less decline and therefore less restoration needed. Maintenance and capital funding would both be important to break this cycle.

- George P - An important issue for the CAC is that work is done in different sections of the park to restore it, but then these sections are not maintained and it declines. This is a 93 million dollar investment and a plan is needed to maintain it.

- George H. – Tim's work will build political clout to support the funding and resources needed for maintenance. However, one issue is that no one knows what is completely needed to maintain the park.

- Hugh – There is graffiti in dozen of locations in the park, and every once in a while it is removed.

- Tim – Getting rid of graffiti is a turf battle; park staff needs to fight the fight. At Central Park, there was 65,000 square feet (about an acre and a half) of graffiti. It took four years to get rid of the graffiti, even as the graffiti continued in other parts of the park. The graffiti crews established two priorities: 1) public areas and 2) newly restored projects or sections of the park. Years later, the crews expanded into other parts of the park. It is important to be consistent and keep removing the graffiti until the graffiti artists learn that their tags will be erased. Park staff applied a standard that the graffiti would be removed in 24 hours.

- Hugh – Did you ever prosecute the people doing graffiti?

- Tim – Prosecuting people was tried but it wasn't entirely successful. Prosecuting takes resources to do the stakeout, then the graffiti artists must be caught, plus court hours, etc and meanwhile other people continue to apply graffiti. If there was someone's "tags" all over the park, they would try to prosecute, but otherwise it was more efficient to erase the graffiti as quickly as possible.

- Arleyn – It is difficult to get an adequate and accurate sense of what is needed to maintain the park now. How long did it take to break down the barriers for jurisdiction at Central Park?

- Tim - It took 5 years to get figures from the city.

- George H. – Will you be prioritizing the tasks identified in your report, such as those that could/should be done immediately, and others that can be done later, etc?

- Arlene – Need to do research on maintenance and standards specifically for historical landscapes.

- Simone, Executive Director of Emerald Necklace Conservancy – Some sub-sections of the park require more expertise e.g. woodlands requires forestry knowledge, rose garden, etc. Will you be looking at the specific expertise needed for staffing these sub-sections? Tim – yes

- Will your recommendations be based on Emerald Necklace full restoration or on the phases of restoration? Tim – I will probably look at it in progressive steps but will look at it in terms of the full restoration.

- Betsy – Tim has not yet seen the MOA. Item 5 requires that municipalities have a maintenance plan. It is important not to extend incremental steps too far because maintenance needed as part of the DEIR.

- George – Can you do this in the time allowed? Tim – yes.

- **Site visit with Tim: Saturday, August 4, 2001** - John will send a separate notice with specific details. Clarissa will also be invited to the site visit.

Scope of Work

- Tim's contract has not yet been finalized, as discussion of the scope is still occurring in coordination with the CAC.
- It is anticipated that some of his work will be completed in time to submit with the DEIR.
- Arleyn is concerned whether CAC will have adequate time to review Tim's work as he progresses.
- Clarissa will also be introduced to the CAC and given an opportunity to present.
- **John will bring both Clarissa and Tim to a CAC meeting in September to report on their work, when more members will be available.**
- Hugh suggested inviting Clarissa to participate in the site visit. John will invite her.
- Arleyn wants to see the work of Clarissa and Tim integrated. Will they get a chance to work together?

III Discussion

Final Letter

- Fran G. has compiled all the comments, based on the minutes, from all of the past CAC meetings. Includes an Executive Summary that identifies key issues from the comments, which will be attached to the letter.
- Eight areas were identified as important:
    1. Project Area
    2. Scope of Project
    3. Historical Restoration
    4. Maintenance and Management
    5. Funding
    6. Maintenance Structure
    7. Continued Role of CAC
    8. Enforcement
- **Fran urges CAC to pay particular attention to the administration piece, as there is a divergent set of views. There is not yet a consensus, but CAC could identify options.**
- Hugh responded that the CAC should propose some options that could be implemented in the short-term.
- The CAC letter does not reflect the CAC's expected role. CAC should reference the MOA.
- **CAC wants to coordinate meeting with the Secretary. Betsy stated that Laura Rome is a resource that the CAC could more easily access, although the Secretary is available as well. This meeting should occur sooner than later, prior to the filing of the FEIR, sometime in early September.**
- CAC agrees to schedule two meetings with Laura Rome: one at the beginning September with the Proponents and one at the end of September without the proponents.
- The comment letter will be distributed to CAC members not in attendance at today's meeting via U.S. mail along with the meeting summaries.
- Anything underlined is a suggestion from a CAC member, but there is not yet consensus on this issue.

- **Fran's questions about the letter: Is there anything wrong, anything that you can't agree with, anything critical that has been omitted? If there is an item you do not agree with, how can it be changed?**

- **Comments on the letter must be sent to Fran G.** ***prior to Friday, Aug 3rd***

- Fran predicts she can make edits to the letter in a day or two.

- In preparing the letter, CAC agreed that Fran and Richard would sign on behalf of the group. Question to CAC from Fran – Are CAC signing letter as individuals or as members of a constituency?

- Laura Rome needs to be contacted to find out which members were appointed as individuals to ensure that people sign in the capacity in which they were appointed. **Fran will take on this task.**

- At this point, the decision regarding whether to include affiliations is not critical, although when the letter is submitted for the DEIR, a decision will have to be made.

- A representative doesn't have to pole the constituents of their organization because they have been appointed by their organization to represent the group. Affiliations will remain on the letter at this time.

Site Visit

- The site visit with Tim and possibly Clarissa will be on Saturday August 4, 2001.

Definition of Project Limit

- John B. distributed an email from Laura Rome, which defines the physical site boundaries of the project.

- Arlene commented that the letter from Laura contradicts much of the CAC's previous discussions. Arlene again requests a glossary of definitions to clarify terminology. She also requested a much tighter control on words, such as "project," "phase 1," [Phase 1 has been used by CAC to describe Charlesgate, which differs from the definition provided in Laura's letter].

- Bruce commented that Laura's letter corresponds with what he's been saying all along.

- Does the maintenance and management plan apply to Muddy River restoration project from curb to curb or bank to bank? Management and Maintenance plan should include curb to curb and be designed to apply to other phases of the project.

- MEPA is only concerned about the locations along the river, which are disturbed by the project.

- Arlene - CAC needs to approach Maintenance and Management plan in the context of the entire master plan - this reflects the curb to curb vision.

- CAC agrees that Laura Rome needs to address the Maintenance and Management expectations of the Secretary, and further discuss the site limits of the project and comments from the CAC that touch issues outside the project boundaries.

- George requests copy of Louisville book that Charles Beveridge mentioned earlier in the meeting and requests that Charles do the same for this CAC. John responded that there are limited funds available. All funds are targeted for specific tasks and projects. John noted that for each dollar spent on Tim's work, is one dollar less for John's coordinating work on the project. John will follow-up on this conversation and explore vehicles for the development of funding for a reference document for the Emerald Necklace similar to the Louisville document.

Next Meeting Date

- The next meeting will be scheduled when there is more information about Tim's interim report.

IV Other Housekeeping

- The DEIR will be submitted several weeks behind schedule, at the end of September or more likely early October. The proponent may file with the CAC prior to filing with MEPA.

- Hugh suggests providing Tim with a resource (point person or working group) from the CAC to answer any on-going questions. After CAC discussion, George made suggestion that Tim could e-mail Bruce and CAC members.

- Simone from Emerald Necklace Conservancy would be happy to organize a focus group or identify individuals for a focus group, including representatives from other organizations not represented on the CAC. Simone agreed to take on this task.

- **Comments on the letter must be sent to Fran G. prior to Friday the 3rd.** She will send out the letter two days after that date.

- **Jane Wells, Facilitator, distributed evaluation forms for MODR's facilitation. CAC should mail MODR completed forms. Additional evaluation forms will be mailed to CAC members not present at this meeting.**

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

July 18, 2001

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Edward	Burke	Restore Olmsted's Waterway Coalition	
Isabella M.	Callanan	Friends of the Muddy River	Isabella Callan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes, LLP	Frances Allou Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		
Gary R.	Hilderbrand	Reed Hilderbrand and Associates	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	

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Emerald Necklace Citizens Advisory Committee

Meeting

July 18, 2001

Sign-In Sheet

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	A A Levee
Arlene	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Roscoe	Sandlin	Fenway Community Development Corp	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

S:\Ex.Off. of Env Affairs\Emerald Necklace\CAC Sign In Sheet\[CAC Sign-in July 18, 2001.xls]CAC Members

Emerald Necklace Citizens Advisory Committee

Meeting

July 18, 2001

Sign-In Sheet

S:\Ex.Off of Env Affairs\Emerald Necklace\CAC Sign In Sheet\[CAC Sign-in July 18, 2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Tom Marshall	ETM ASSOC. LLC	732-572-6626	etmassoc@ifu.n
Charles Beveridge	OLMSTED PAPERS	202-885-2832	cbeveri@americ .edu
CARROLL WILLIAMSON	FRIENDS of the MUDDY RIVER	868 7485 617 738 9367	MAGSONE@Earthlink.net
Anne Cutler		617-738-0107	EBCUTLER@Earthlink.
Simone Auster	Emerald Necklace Conservancy	617-722-9823	SAuster829@aol.com
John Burckardt	c/o Bos. Parks	617 635-4505	jburckardt@ci.boston.ma.us
Betsy Shure Gross	EOEA		
Brenda Lew	Friends of the Muddy River	(617) 536-4772	blew@mparch.com
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Frank Fair	Town of Brookline	[illegible]	[illegible]@town.brookline.ma.us
Kara Wilbur	Fort Point Assoc.	617 357-7044	kwilbur@fpa-inc

From: Brenda Lew <blew@mparch.com>
To: muddyrvr@tiac.net; Cheryl Kelley <cdk@bu.edu>; James Morgan <JJmorgan2000@cs.com>; David Tutein <dtutein@lynx.neu.edu>
Subject: Fw: (fencing adjacent to Brookliine Ave.bridge, and Master Plan
Date: Tuesday, July 10, 2001 12:43 PM

----- Original Message -----
From: "Isabella Callanan" <muddyrvr@tiac.net>
To: "Fran Beatty" <beatty@ci.boston.ma.us>
Cc: "Brenda E Lew" <blew@mparch.com>; "Lee Cooke-Childs" <lcc@tiac.net>
Sent: Wednesday, July 04, 2001 11:37 PM
Subject: (fencing adjacent to Brookliine Ave.bridge, and Master Plan

> We (Friends of the Muddy River) request that the cyclone fencing near the
> Brookline Aveue bridge be taken down. We understand it was put up at the
> time the bridge was being worked on and can now be removed.
>
> At the last CAC meeting ;I brought up the matter of how the clycling path
> has been dealt with in the 1989 edition, the 1883 edition, and more
> recently the 2001 edition updated by Marion Pressley. We are opposed to
> the introduction of a new asphalt road in the Riverway because our park is
> so narrow, and also it is in a flood plain. As I said in the early 90's
> anyone with a good arm can throw a rock from the Boston edge of the park
> to the Brookline side. The MDC has on three occasions taken a slice off
> the mid section of our park to widen the Riverway road. The resulting
> greenspace is very limited and very precious. Following is the material
> which I presented from the three editions of the Master Plan:
>
> I. 1989 edition, (unpaged.) On page opposite figure 124.
>
> "Build bike/jog path along east edge of park on route of former bridle
> path.
>
> "The Riverway no longer functions well as a link in the park system.
> The re-use of the former bridle path provides connections to the parks on
> both ends as part of a system-wide route. Although other parks have
> bike/jog circuits such a route is not feasible in the Riverway, because of
> space limitations on the Brookline side. Because of the Riverway
> (parkway) widening, the bike/jog route has to be directed under the
bridge
> where additional space is available. (This is a park-specific application
> of a system-wide application.)"
>
> Also in the same 1989 edition, Part Three, Master Plan Implementation,
> under the heading Chapel Street Bridge:
>
> "new bituminous concrete bike/jog path (6,000 SF)
> +++
>

> 2. 1993 edition pages 99-100
>
> "The present paved pedestrian path on the Brookline side of the river
> will become
> part of the newly established cycling and jogging path, which in the rest
> of the system will be following the route of the original and now obsolete
> bridle path. Some modification of the present path , such as changes in
> surface treatments and
> separation of ways,. may be necessary to ensure that cycling and jogging
> traffic do not conflict with pedestrian use. The establishment of this
> continuous route throughout the Emerald Necklace park system fulfills a
> recommemndation for a
> separate bicycle path made by Charles Eliot in 1896."
>
> also in 1993 edition, Riverwag Projects Priorities, Scopes and Costs,page
> 137
> "Riverway South, East Side
>
> "Proposed Improvements include.........and 6,000 SF new bituminous
> concrete cycling and jogging path."
>
> ++
>
> 3. The Emerald Necklace Master Plan,
> Prepared by Walmsley-Pressley, joint venture 1989, Updated by Pressley
> Associates Inc. 2001
>
> page 145,. The Riverway Plan
>
> "Modify the present Boston pedestrian path to accommodate separate
> cycling/jogging and pedestrian paths, to ensure the establishment of the
> system-wide dual circulation system."
>
> also on page 191
>
> Longwood South-East Side
> "Proposed improvements include.........new asphalt-sealed crushed stone
> walks
> (15,000 SF)
>
> Longwood North-West Side
> "Proposed improvements include......new asphalt-sealed crused stone
> walks."
>
> ++
>
> Lastly I would like to comment that the continued use of the word "path"
is
> misleading. According to the OED and Websters Third a path is an informal
> way made by the passage of human or animal feet. This is particularly
> curious in the 1993 edition description of the paved road on the
> Brookline side which was certainly designed to accommodate police cars as
a
> "paved pedestrian path."
>

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

August 17, 2001

Justine P. Liff, Commissioner
City of Boston Parks and Recreation Department
Brookline Department of Public Works
1010 Massachusetts Avenue
Boston, Massachusetts 02118

Thomas DeMaio, Commissioner
Department of Public Works
Brookline Town Hall
333 Washington Street
Brookline, MA 02245

RE: Emerald Necklace Environmental Improvements Master Plan and Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement (the "Project")
EOEA No. 11865
Comments on Preliminary Draft Environmental Impact Report

Dear Commissioners Liff and DeMaio:

As you know, the Citizens Advisory Committee ("CAC"), appointed by Secretary of Environmental Affairs Bob Durand to assist in the review of the Project, has carefully and intently studied a preliminary Draft Environmental Impact Report at its frequent meetings over the last several months. The Citizens Advisory Committee appreciates the proponents' efforts to address the concerns which the CAC has expressed at these meetings. In particular, the CAC is most receptive to the recent modifications which the proponents' made to the Vision Statement, and their willingness to secure two sub-consultants to provide independent advice regarding maintenance and management of this historic landscape.

The CAC wishes to provide to the proponents and their consultants written guidance which identifies what it believes to be the major issues which need to be addressed, in order to ensure the long-term success of the Project and the rehabilitation of the Emerald Necklace Park system as a whole, along with specific comments on various portions of the Draft Report.

The critical issues are identified in the remainder of this letter and the more specific comments are included in nine attachments, eight of which refer to the identified specific sections of the Draft Report, and the last of which has been identified as Parking Lot Issues, since the best place to include them was not apparent: Revised Executive Summary, Project Alternatives (Section 2), Project Description (Section 5, Appendix 1), Project Impacts and Mitigation (Sections 6, 7, and 9), Best Management Practices (Section 2.5), Best Management Practices for Stormwater Runoff (Section 5.7), Management and Maintenance Plan (Section 8), Funding (Section 10), and Parking Lot Issues. The enclosed comments on the Executive Summary provide a concise summary of the major points set forth in more detail in the individual section comments. It should be noted that the CAC has not studied the many Appendices to the Report.

1. Project Area. This issue seems to have dogged the project and its review from the start. A project map with clear delineation of existing owners of both project areas (City of Boston, MDC, Town of Brookline, etc.) and abutting properties (with special emphasis on institutional and corporate abutters) should be created and incorporated into the DEIR. A history of ownership would also be useful – perhaps this can be lifted from the Emerald Necklace Master Plan.

2. Scope of the Project. There has been lengthy discussion and continued confusion about the specific scope of the project and its future phases. The CAC is concerned that this confusion, if continued, will affect the public's perception of the project and the ultimate success of its intended or anticipated goals. Funding agencies, the state and federal government will also need to know that the public understands that the entire park, and or the pathways, upland banks and glades will not be included or funded in this specific *flood control/water quality/habitat enhancement* project. A clear explanation of the differences between: a) Olmsted Parks/Emerald Necklace Masterplan goals, b) the project as described in the Secretary's Certificate(s), and c) Muddy River Restoration project boundaries and scope should be created to eliminate the existing ambiguity and should be included in the DEIR.

3. Historic Resource Protection. Major attention should be given to historic interpretation of the work which will be done. While this is to a large extent an engineering project, the historic and environmental implications are enormous. The historic resources section of the DEIR should be expanded in substance and strengthened in tone.

   The EIR must be clear that this is a rehabilitation project. Rehabilitation is the treatment of choice when substantial repair work is done which will retain both the historic character and contemporary use of an historic space.

   The distinction between primary and secondary periods of significance is obscure and these words should be avoided. Rather language should be inserted in the appropriate area that states, for example, " rehabilitation work will reestablish the historic character of the 1890's era."

   The historic resources under Section 6 should not be limited to built features, but should also include landscape features such as vegetation and grading, which are part of the historic fabric of the parks to be improved. The CAC recommends that an assessment and evaluation be made of the health of existing vegetation within the limits of the work (giving due respect to heritage trees and plantings) to determine its life span and whether timely removal of an obviously declining tree or shrub mass might be necessary during construction.

   In addition, the EIR should state how new as well as mature trees and established plantings will be protected during construction (around Fenbridge, for example).

4. Maintenance. In order to ensure that the capital investment and environmental improvements which the project represents are not squandered in the future by failure to properly maintain and manage the park areas rehabilitated by the project,

the DEIR must provide as much detail as possible regarding the management and maintenance program which will be implemented prior to, and upon completion of the various capital improvements.

The CAC strongly endorses, and would like to restate for the record, what Frederick Law Olmsted wrote in 1873:

> *"The Park Commissioners are trustees and managers for the whole body of owners of a large amount of public property. Their business is of two kinds; that of forming parks [and] that of keeping them. The second is the graver responsibility. The Commissioners are to be holden to a stricter account if the arrangements they make for it are ill judged or if they delegate it to faithless or indifferent agents."*

Secretary Durand has clearly recognized Olmsted's wisdom, and the importance of this issue, for his April 29, 1999 Certificate on the Environmental Notification Form imposes upon the proponents clear and specific requirements with respect to a management and maintenance plan. The Certificate specifically requires the proponents to include in the EIR

> "a comprehensive maintenance management plan to be implemented by Boston and Brookline throughout the watershed of the Muddy River to ensure continuing effectiveness of any stormwater or water quality improvement measures and prevent new siltation, and it should specifically identify funding sources for ongoing, long-term implementation of the maintenance plan."

It further requires that

> "to ensure that the capital investment is protected, the EIR should describe in detail the proponent's maintenance and management plan for maintaining the restored condition of the Muddy River and the Emerald Necklace parks...It should include commitments to maintain the restored historic landscape and structures. It should include protocols for regular monitoring of environmental conditions to provide a continuous feed-back loop by which the effectiveness of management practices can be measured. Finally, it should define the proportional financial responsibilities of the City of Boston and the Town of Brookline for all short-term and long-term maintenance and monitoring measures related to the project."

The Memorandum of Understanding effective as of November 4, 1999 by and among the City of Boston, the Town of Brookline, the Executive Office of Environmental Affairs, and others also contains in Paragraph 5 the recognition of these two municipalities that an appropriate maintenance and management plan will be submitted jointly to the Secretary of Environmental Affairs and reviewed as a part of the review for adequacy of the environmental impact report.

As currently drafted, Section 8, does not begin to satisfy the obligations imposed by the Certificate or the Memorandum of Understanding. It does not provide a realistic description of prospective maintenance needs or a sufficient plan for how those needs will be met. There is a strong consensus that before maintenance can be adequately addressed in the DEIR, there needs to be a full study of required staffing levels, training needs of that staff, resources, costs, special needs of historic landscapes and other issues critical to the successful maintenance of an historic Olmsted park.

The CAC has requested that a consultant be hired to advise it in this regard. The proponents have responded positively and it is the hope of the CAC that the report of Tim Marshall and Clarissa Rowe will provide the substance for an appropriate management and maintenance plan to be included in the DEIR. Information gathered from the Arnold Arboretum and the Trustees for Reservations as to how they manage their natural resources should be a part of the consultants' analysis.

The CAC also recommends that the rewritten section include a table describing the acreage of turf, trees, water, playfields, and other amenities, the current level of staffing and the desired level of staffing based on research from the consultant and similar fully staffed historic urban parks of the same size and landscape complexity in a similar climate. The section should explain how the parks should look in the professional mind of the proponents, and should clearly delineate the costs under current union wage scales of a fully staffed maintenance division for the Emerald Necklace with the optimum staffing level. Richard Heath has written several letters on management and maintenance, and a copy of his comments on this section of the report are enclosed.

5. Funding. The CAC strongly believes that the two municipalities that are the proponents need to clearly identify in the DEIR their commitments to the funding of both the capital outlay and long term maintenance and management portions of the project. Budgets should be established now, which will support the funding required. Without specific budgets, the proponents cannot commit to take specific actions. Political considerations should be addressed, and mechanisms should be put in place now to ensure dedicated revenues for the parks being improved. The CAC supports practical cost savings incentives for innovative approaches to construction but not at the expense of environmental regulations and the conservation of historic resources.

6. Management. The CAC would like to state that past and current management of the resource has been woefully insufficient and damaging to the park system. The CAC has strong doubts about the efficiency of committee management and annual reporting as recommended in the draft DEIR. The DEIR should explain how multiple agencies that have separate and independent legal jurisdictions over the Necklace parks could be made more efficient and accountable to the Necklace as a whole or their artificial boundary lines erased altogether.

   The CAC discussed at length whether an independent Emerald Necklace Administration should be established for this purpose. Numerous references to

these discussions are contained throughout the enclosed section comment statements. While there is not currently unanimity as to the best way to address this issue, there is a uniform commitment, as indicated in the next paragraph, that the CAC should have a continuing role in this regard.

In the meantime, the CAC recommends the study of several possible alternatives to ensure unified management, including:

- Special legislation creating a separate Emerald Necklace Administration
- An Emerald Necklace Authority
- A non-profit partnership with the proponents
- A more detailed MOU with specific commitments from the municipalities and an enforcement mechanism

The CAC anticipates and would like to work with the Secretary in guaranteeing that a proper management structure, which can ensure the preservation of the environmental improvements proposed, is in place ***before*** permits are issued to proceed.

7. The CAC Role. The role of the CAC should be sustained throughout the life of this and future phase(s) of the project, including the planning, design, construction, and management phases. At the very least the CAC expects to remain intact as a staffed and funded monitor of the project through design and construction. Site visits to inspect progress should be an integral part of a regular meeting schedule.

   The CAC endorses its role to act as an ombudsman throughout the life of the capital project, and in the implementation of the maintenance program, as well. Project proponents should provide quarterly updates to the CAC or their consultants and two public meetings should be held. The first public meeting should be held at the time of the release of the "annual" update at year-end. The second public meeting should be held within a month or two after, for the CAC to formulate a response to the proponents using input from the public as a guide. Additionally, a process for public representation, including but not limited to issues of substitution, replacement, removal, and adaptability to the formation of future constituent groups should be clearly established. The existing CAC is a good start as appointed, but a more formal and regularly maintained check on this public "balance of power" should be created and codified for all parties.

8. Enforcement. The multiple jurisdictions that overlay the Emerald Necklace hobble its current maintenance and management, particularly with respect to the parkways. The preliminary DEIR does not explain how the maintenance requirements with respect to the project areas will be enforced given those multiple jurisdictions. The CAC (and we believe the public) wants assurance that the maintenance requirements set forth in the DEIR will be commitments of the Town of Brookline, the City of Boston and the Metropolitan District Commission, and are legally enforceable.

> The CAC has also requested clarification on what recourse is available to the Secretary to impound funds or otherwise penalize the proponents if they fail to comply with their obligations to maintain this $91 million project for three parks in the Emerald Necklace, the largest capital project for any park in the history of Boston and Brookline.

In summary, we hope that the proponents find this letter and the enclosed section comments useful in preparing the DEIR which will be submitted to the Secretary. The CAC will have further comments when it reviews the DEIR, and by that time, it is hoped that some of the still ambiguous issues which we fear could defeat the proponents' goals will have been resolved.

Thank you.

By:______________________________
Frances Allou Gershwin

By:______________________________
Richard Heath

On behalf of themselves and the other Members of the Emerald Necklace Citizens Advisory Committee:

Kathy Baskin, Charles River Watershed Association
Charles Alan Birnbaum, National Park Service
Edward Burke
Isabella M. Callanan, Friends of the Muddy River
Suzanne Comtois, Fenway Community Development Corporation
Christine Cooper, Jamaica Pond Project
Edward Cutler, Ph.D.
Margaret Dyson, Historic Massachusetts, Inc.
Alan Goodman, The Abbey Group
George Hagerty, Fenway Studios, Inc.
June Hatfield
Gary R. Hilderbrand
Adam Kahn, Brookline Conservation Commission
Frances J. Kemp
John Leahy
Arleyn A. Levee, National Association for Olmsted Parks
Arlene Mattison, Emerald Necklace Conservancy
Hugh Mattison, Friends of Leverett Pond
Lauren Meier
Paul Mentag, Fenway Alliance
Jane Pfister
George Proakis
Marion Sabal, Fenway Garden Society
Joyce Starner, Symphony United Neighbors
Fredericka Veikley, Fenway Civic Association
Eileen Woodford, National Parks & Conservation Association

cc: Stan Ivan, Chief Engineer, Boston Parks and Recreation Department
Erin Chute, Brookline Director of Parks and Open Space
John Burckardt, Parsons Brinckerhoff, c/o Boston Parks and Recreation Department,
Bruce Conklin, PE, Camp, Dresser and McKee, Inc
Samantha Overton Bussel, Deputy Commissioner for Policy, Metropolitan District Commission
John Sullivan, Chief Engineer, Boston Water and Sewer
Laura Rome, Executive Office of Environmental Affairs
Betsy Shure-Gross, Executive Office of Environmental Affairs
Mark Smith, Executive Office of Environmental Affairs
Richard Thibodeau, Chief Planner, Executive Office of Environmental Affairs

#74525

Comments on **Revised Draft of Executive Summary**
Emerald Necklace Citizens Advisory Committee (CAC)

July 16, 2001

Note: The Proponent(s) and CDM have substantially reworked the Vision Statement and Executive Summary with regard to the previous draft comments. Please refer to "DRAFT Vision Statement, N.D." & "Muddy River Executive Summary, Revised Outline (partial), May 24, 2001" for specifics. Major draft comment themes are repeated below, with changes to date summarized in *italics* and areas that still need work *underlined.*

GENERAL COMMENTS

Vision Statement

The Vision Statement should be a statement of the goals and philosophy of the project and "set the stage." *The vision statement is now a stand-alone document that has also been substantially rewritten. This document will precede the Executive Summary.*

Relationship with Emerald Necklace Master Plan

Need to more clearly explain the relationship between this project and Emerald Necklace Master Plan. *This material has been added as requested – is this enough explanation? There is continued concern about project scope vis-à-vis Secretary's Certificates.*

Project Objectives

The Executive Summary needs to tie in the project objectives and explain why alternatives, options, approaches are desirable or recommended. *See 'Solving Problems' section of new Summary. Additionally, references throughout the ES will point the reader to corresponding report sections for details. Graphics and tables of screened alternatives and preferred options are now included.*

Style/Presentation

Text should be presented in such a way as to capture the diverse readership with more "punch" and "passion." *Revised ES will include many pull quotes, style boxes and graphics.*

The Executive Summary needs to be written to reflect a stronger and more accurate representation of the project as it was presented by the consultants.

All passive or subjective verbs should be changed to active tenses. The sense of inevitability and certainty with which the consultant delivered numerous presentations to the CAC needs to be present in the Executive Summary, and the document as a whole.

The CAC recommends the use of a professional editor. *This has been accomplished. The tone seems clearer and more directed.*

The ES should be illustrated. *This has been accomplished. Do the maps consistently make clear the areas, boundaries, scope of work being referenced in text? Will they/should they be colored? Example: Riverway and Olmsted Park project area maps (USGS) in new ES seem to be confused by contours and structures – the river or park is lost.*

There should be two additional maps: one delineating the project area and the other the entire Emerald Necklace Park system. These maps need to be more graphically readable to the non-technical reader. *These maps have been added. Are these maps now too simplified – especially the Emerald Necklace map? Should these maps be full-page or fold-out so that they will have enough specific information to orient the reader as well as pack more "punch" and allow the reader to begin to 'enter' the park and project areas (understanding these are different maps than the large format appendix maps with their requisite technical notations)? Should these maps be adjacent to each other to help the reader understand the boundaries of the total park system and the limits of the Phase 1 improvements – perhaps an overlay? This jurisdictional/boundary/scope of work issue is still causing concern and or confusion for the CAC and it would be assumed the public as well.*

Pubic Relations

The CAC recommends that the proponents commission a separate advocacy/marketing brochure derived from the Vision Statement and Executive Summary for wide public distribution. *This has not been funded or addressed. Much as the proponents have gone outside the existing consultant team with respect to a Maintenance and Management sub-consultant, perhaps the new ES editor can provide a starting point for discussions with a professional designer to create a simple brochure from the newly reworked ES. The proponents should engage in a dialogue with the Emerald Necklace Conservancy on this issue.*

SPECIFIC COMMENTS

1.0 Overview

Check accuracy of dates and confirm or clarify terms. Document claims for certain usage or discard if non-supportable. *Have term searches "restoration," "rehabilitation," etc. been performed to unify document? The terms need to be consistent with the terms as they are defined by the National Park Service. Has glossary been created, and referenced throughout the ES (the first place many terms will be encountered)?*

2.0 Project Alternatives

Maps need to present referenced information clearly to the reader. *See comments on illustrations above.*

Alternatives should be clearly explained and the best combination of alternatives made plain to the reader. *This has been addressed with the rewrite and addition of screening tables. Members of the CAC expressed concern that this section lacked a clear conclusion. MEPA process norms suggest that this section illustrate all of the project alternatives and their analysis in a straightforward and non-biased format. Project Analysis writer recommended that the CAC focus on the substantive content portions of this section and trust that the presentation is appropriate to the intended audience. Do these comments hold true for the rewritten ES?*

Define restoration, rehabilitation and choose the correct term for this project. *See comments above re Overview.* Consider avoiding the terms "primary and secondary periods of significance." *The new ES uses "historical significance" and notes dates.*

3.0 Public/Agency Involvement

New ES reiterates MEPA process, summarizes regulatory requirements. *A flow chart is suggested as an aid? List of permits required is added. Should public comment phases or other pertinent statutory regulations be made clear to the reader so that they understand their ongoing role in oversight through, and in concert with, public agencies?*

4.0 Existing Conditions

Are the "Physical Features" and existing conditions as described in the new ES sufficient or now too brief?

5.0 Project Design and Construction

Need to tie back to project objectives. *Screening tables have been added.*

A goal of the project is to reduce sediment loads by another 30%. The CAC was reluctant to set a higher goal, which would be desirable considering the effort and expense going into this project, and decided to request further information from the engineers to understand better the implications of asking for further reductions of sediment loads. Suggest making reference to the Emerald Necklace Master Plan and Olmsted's original design. The CAC recommends further explanation of the actual physical changes needed to achieve the 30% and support for arriving at this figure. For example, what would the cost of each change be, and how much would it reduce sediment loads.

BMPs are weak. *BMPs tend to be focused on water quality but not the other four project objectives. EMP consultant report should be referenced when completed.*

Insert paragraph about the initiation of public processes in future for park restoration beyond the existing project. MDC and City of Boston should create new CAC that begins public process for the parts of the park(s) not addressed by this flood control/water quality project. The proponent should work with CAC to come up with a process that involves MDC and other appropriate agencies or entities.

A public education component including informative signage and descriptions of systems and equipment used at project sites should be created, funded and implemented throughout the various phases of the project (Parking Lot issue).

6.0 Assessment of Impacts

Describe two-year post planting maintenance plan. Discussion focused on the issue that a maintenance plan may be inadequate before vegetation is established.

Historic resources are not just built features but are also landscape features and include the whole character of the landscape: grading, plantings, and structures.

Historic character has been compromised by the construction of the Bowker overpass, however, there are several historic features remaining, such as grading, significant trees and defined spatial relationships.

All traffic sections, want description of traffic and noise impact of construction.

7.0 Environmental Mitigation

8.0 Management and Maintenance Plan

The EMP sub-consultant report needs to be referenced here. This section is still in process and cannot be adequately addressed in the ES until finished.

CAC continues to suggest idea of a centralized administration of the park e.g. a separate authority that has the funding, responsibility and accountability to oversee park maintenance and management. This should be reviewed/referenced in EMP report when finished.

Section 2.5.2 figure 2-40, Add this pie chart to the ES to emphasize that 85% of urban runoff is related to maintenance. Create a separate chart that shows just maintenance.

MDC to provide information on jurisdiction and accountability of MDC

9.0 Regulatory Requirements

Secretary is looking for a pathway for protecting the resource of the Muddy River. CAC can help the Secretary convince the national government and other entities to fund this project.

CAC suggests modification of the Secretarial Certificate from CAC annual updates to quarterly updates with access and meetings with proponents and an independent advisory role for management and maintenance throughout the year.

10.0 Funding Strategy.

Should clearly reflect how much funding can realistically be secured from various funding sources. The CAC is very concerned that the proponents will create a segmented project. DEIR needs to include the proponents' plan for how all necessary funding (both capital and maintenance) can be achieved.

Clearly identify which funding sources the proponents are actively pursuing. The proponents should list themselves as a funding source.

The proponents need to strengthen the public/private partnership model: currently limit partnerships to connections between institutions and the Boston Parks and Recreation Department

Outline legislative strategy similar to that pursued on the Federal, congressional level.

Prepared by George Hagerty

#74617

Comments on **Project Alternatives (Section 2)**
Emerald Necklace Citizens Advisory Committee (CAC)

May 16, 2001

GENERAL COMMENTS

It is our understanding that pursuant to MEPA guidelines, the purpose of this Section is to illustrate all of the project alternatives and provide a summary analysis of each in a straight forward and non biased format, rather than to indicate any conclusion of the proponents as to the preferred alternative. Therefore the CAC focuses here on the substantive content portions of this section.

SPECIFIC COMMENTS

Flood Control

2.1.5 - Given the invasiveness of the *Phragmites*, it should be clearly stated that the dredging should include root mass removal in order to prevent a reoccurrence of the plant material. Writer's comment – is this necessary given the language on page 2-39 last paragraph? I believe that the last 5 bullets under this section are rendered moot relative to the MEPA format approach described above.

BMP'S

2.3.7 Explain in more detail the plans for daylighting the culvert between Willow Pond and Leverett Pond or otherwise restoring flow to the Babbling Brook. Also include discussion of plans for both upper and lower sections of Babbling Brook. Need to reference Master Plan and Brookline's CIP.

P. 2-96 , 2.5.2.4 Language should be stronger regarding illegal connections. Reference relevant laws; the proponents should provide details how they are addressing this problem. Include on what has been done up to date. In the second paragraph of this section change "was considered a BMB" to "is" considered a BMP

P. 2-97, 2.5.2.6 First part of section is inaccurate, should include responsibilities of all proponents and other responsible parties, in the form of list/chart. Within actions, "should" vs. "is" needs to be clarified

2.5.2.5 Hazardous waste and paint recycling collection locations should to be more targeted to areas close to the Muddy River; also the frequency of collection days should be raised.

2.5.2.2 Catchbasin Stenciling – The second paragraph is inaccurate. The municipalities have not demonstrated activity on a catchbasin stenciling program. This reality should be made clear.

Table 2.2, p. 6 of 6, Chart implies that MDC cleans catchbasins daily after grass season, P. 2-95 2.5.2.1, This page states MDC does not have formal program. Inconsistent statements between table and text.

CAC is seeking accuracy and presentation clarity on current BMP activity by Brookline, Boston and the MDC. Also seeking clarity on respective responsibilities and coordinated effort where impacts overlap in multi-jurisdictional areas.

Table 2-3, needs to clarify visually the preferred alternatives and the degree to which they meet project objectives. Clarify what Bold text means; we recommend an insertion of a few how-to sentences to help the reader use this valuable table.

Prepared by Paul Mentag

#74459

Comments on **Project Description (Section 5, Appendix I)**
Emerald Necklace Citizens Advisory Committee (CAC)

May 7, 2001

General Comments

1. This is a rehabilitation, not a restoration, project - retaining remaining historic significance according to historic documentation. It is not possible to restore the river. Different conditions exist today that make a restoration not possible. Change wording in the document accordingly and use that wording consistently throughout the document.

2. The document needs a glossary. **The terms need to be consistent with the terms as they are defined by the National Park Service**. If the term is just a one or two word explanation, it could be added within the document.

3. **The project needs to be more clearly defined**. This is part of a larger Emerald Necklace project. But, there are enormous parts of the rehabilitation that will not be done until there is a larger project in the future. It would be helpful to make a list of future priorities, which have the biggest impact on the project.

4. **This project has its limits and only applies to certain areas.** Limit lines are in DEIR. The document needs to communicate more clearly the boundaries and scope of work. Cost containment is a major contributor to the scope of this project. The ongoing management and maintenance pieces can cover broader scope.

Section Five: Project Design and Construction

- 5.1 on p. 5-2, Charlesgate "installation of new park benches" **and trash cans**.

- 5.1.5, Insert a paragraph about the initiation of public processes in future for park restoration beyond the existing project. MDC and City of Boston should create new CAC that begins public process that hasn't yet been done. The prior Charlesgate Charette (Community Outreach Group) would be incorporated into the process. Any such process also needs to be conscious of the future restoration of the Bowker overpass. The proponent should work with CAC to come up with a process that involves MDC and other appropriate agencies or entities.

- 5.1.1 Page 5-2 Consultants should include incentives to contractor to lower costs on dredging disposal. The document can include a statement regarding incentives for reducing costs in the EIR. Cost savings need to

be balanced against environmental and historical concerns, as well as legal and practical operations. As part of contract documents "best management practices" are routinely included.

- The CAC supports environmentally sensitive cost-savings incentives for innovative approaches to construction methodologies.
- P. 5-7, Section 5.1.5, third paragraph – Define/clarify "in-kind". Addition - "certified arborist and professionally trained horticulturists."
- Figure 5.4 The shading key for the *Phragmites* on the south side of Agassiz Bridge dropped out on the printing. Boundaries are there but shading isn't.
- 5.2.2, P. 5-13 Signify the importance of "day-lighting" in this area. Add some history of the public process which sets the stage for the work. Describe new legislation.
- Louis Pasteur is also known as Higginson Circle.
- Include description and discussion about removing the "jug handle" and its benefits to the project as presented in Boston Transportation Dept. public processes.
- 5.2 Back Bay Fens. Describe how long it will take to replant after removal of staging area? Should define schedule for replanting in all sections of the river.
- 5.2.2.1 This section states there will be new pedestrian and bike pathways constructed to connect to other sections of park. The proponents should consider adding improvement to street crossings for bike path.
- 5.2.5 P. 5-21 Rehabilitation planting must conform to standard horticultural practices. Clarify that this includes aeration and soil conditioning.
- 5.2.7 State clearly how long-term maintenance will be a part of the consideration when choosing from the Olmsted palette of plants.
- 5.4.2 Explain "work in this area (Olmsted Park) can proceed independently of infrastructure work on the project."
- 5.4 .4 Leverett Pond area is described as having integrity from the Primary Period of Significance. And information is available "to recover the effect that Olmsted intended and that is documented in historic photographs". Since Olmsted's intent for rural scenery was aquiet enjoyment and a tranquil, restful, and soothing effect; provide specifics as to how this rolling meadow will be rehabilitated with the presence of the

re-orientation of the Daisy Field backstop and playing fields and stands. Explain the proposed viewsheds and plantings and how they relate to the Olmsted design and intent.

- What plants will be used for "turf covered banks? Are there any that are less attractive to geese, which could be included?
- P. 5-49 "In Olmsted Park there are three islands." "...The goal will be to disturb the two larger island as little as possible..." There is a need to stabilize the shorelines of the two larger islands, and this should be stated explicitly.
- 5.5.2 "Dredging in Willow Pond is justified principally as historic restoration," Water quality is a major factor at Willow Pond. Outflow from the Chestnut Street Drain has caused oil to leak into Willow Pond, thereby creating oil-polluted sediment.

Prepared by Arlene Mattison

#74460

Comments on **Project Impacts & Mitigation (Sections 6, 7, & 9)**
Emerald Necklace Citizens Advisory Committee (CAC)

May 22, 2001

Preface:

The CAC offers the following comments to assist the proponents in improving the DEIR.

Section 6: Assessment of Impact/Environmental Consequences

- Section 6.1, installation of new park benches - add "and waste barrels". (*this insertion should be included throughout the section as appropriate).
- Section 6.1, In addition to evaluation of health of trees and shrubs in the area should be some, focus on the removal of dead trees.
- Section 6.1.1.3, first paragraph second sentence, clarify and reorder sentence.
- General comment: Repetition of sentences about fecal coliform count means you don't know which sections of the river are better or worse and which sections have a standard problem. If there is a reference to a table or appendix that has the information, include the reference.
- Section 6.1.2.1, last paragraph, add requirement of preparation of the soil, e.g. aeration and tilling in advance of sodding and seeding and restoring landscape. Describe site preparation specific to each area.
- General Comment: Interested in the role of the contractor versus the city in managing new vegetation during interim period before vegetation is fully established. Describe two-year post planting maintenance plan. Discussion focused on the issue that a maintenance plan may be inadequate before vegetation is established; there may be a need for more care of the vegetation during the transition period.
- Section 6.1.2.2, under Benthic Resources section, question assumptions regarding' greater/lesser value of benthic versus planktonic resources. Support for this?
- Section 6.1.2.2, Benthic Resources section, bio-accumulation is preferred term for bio-magnification.
- Section 6.1.2.2, Benthic Resources section, Recruitment from storm drain. What might be recruited from a storm drain that would be desirable. Give examples or delete.

- General Comment: All historic resources sections under Section 6. Historic resources are not just built features but also include landscape features that are remaining, for example vegetation and grading. Historic resources are also the whole character of the landscape, which includes grading, planting, and structures.

- Section 6.1.3.1, include that the historic character has been compromised by the construction of the Bowker overpass, however, there are several historic features remaining, such as grading, significant trees and defined spatial relationships.

- Section 6.1.3.1, some sections refer to Charlesgate as having no historic resources, although there are references about historical resources in other parts of the chapter. Need to clear up inconsistencies about historical resources in the Charlegate area.

- Section 6.1.3.1, need to clarify the kind of protection fencing that will be used.

- Section 6.1.4, want reference to an explanation of construction traffic impacts, e.g. appendix reference and include clearer explanation of relative quantitative and qualitative impacts in this section.

- General Comment: Section 6, all traffic sections, want layman's description of traffic and noise impact of construction.

- Section 6.2, bullet 3, restore the bank as constructed according to historic intent, instead of natural bank.

- Section 6.2.1.2, last sentence, need recommendation to address how to deal with Stony Brook conduit being a continuing source of contamination.

- Section 6.2.1.2, define analytes in glossary.

- Section 6.2.1.3, Staging Area Runoff, second sentence, substitute: crushed stone will minimize compaction, instead of leaving soil undisturbed, which is inaccurate.

- Section 6.2.1.3, Turbid Water section, Phragmites should be cut before flowering in (the previous) July as a first step before seeds come out. Also include statement that proper cultural practices should be followed in removing *Phragmites*.

- Section 6.2.2.1, p. 6-22, how is the loam ground going to be prepared for restoration? Similar to previous comment about aeration and tilling the soil.

- Section 6.2.2.2, Examples of freshwater shellfish in the Fens, if any.

- General Comment: Desirable to reference validation or documentation in appendices that support assertions throughout the draft EIR.

- Section 6.2.2 .1, How will mature historic trees and other historic features in the Fens bridge staging area be protected during construction.
- Section 6.3.1.2, sediment quality section, concerned about limited reference to animal fecal matter. This is the first reference to this.
- Section 6.4.1, second to last paragraph, need to include more strategies for discouraging geese, in addition to the strategy of planting vegetation. Planting will be done consistent with historic intent. Planting alone may not solve the geese problem.
- Section 6.4, include in bulleted list: stabilization of eroding island shores.
- Section 6.4.2.2 and 6.5.2.2, boiler plate language better suits down stream as opposed to upstream habitats. Character changes as you move upstream; regional accuracy required.
- Concerned about sequence of dredging and silt fences in terms of the impact on the river and fish. Clarify whether one sequence of dredging is better than another sequence.
- Section 6.4.2.2, Wildlife Resources, More detail on the rodent population.
- Section 6.4.2.3, explain impact on Grebes under endangered and threatened species section. Why are Grebes not an issue? Not residents here?
- Section 6.4.2.5, first paragraph, make reference to work that needs to be done on other two existing islands.
- Section 6.4.3.3, want more explanation about design and impact of new softball field, particularly on historic resources, pedestrian and traffic impacts.
- Section 6.5.1.3, fourth paragraph, 6-84, why only BWSC for the catch basin improvement program in Willow Pond?
- Typo: repetition of word "dredging"

Section 7: Environmental Mitigation

- Section 7.0, p. 7-1, second sentence in second paragraph – need clarification on equal precedence.
- Section 7.2.6, who enforces work under Weekly Environmental Inspection Reports.
- Page 7-12, fourth bullet, number 3, re: water samples – three sources (field) are identified - where will the analysis of the other samples be done.

Section 9: Statutory and Regulatory Standards and Requirements

- Section 9.1.2, section 106, define what an undertaking is. It is a technical term (use info in earlier part of document).
- Section 9.1.2, this section should note that the Secretary of the Interior's standards are the benchmarks against which effects are evaluated.
- Section 9.1.2, the Mass Historic Commission is the SHPO not "would function as."
- P. 9-5, Delete last sentence in section 9.1.2 because it is not applicable.
- Section 9.2.1, in parentheses, correct spelling of man-made – not madmade!
- Section 9.2.1, second to last sentence in paragraph 2 regarding no historic elements at Charlesgate, contradicts earlier statements in Chapter 6 regarding historic features at Charlesgate.
- Table 9-1, and all similar tables in Section 9, reference the column titled "no effect on historic resources column" under Section 106. The river restoration work will impact the park, which is an historic resource. Therefore, under Section 106 none of the construction activities can be considered to have "no effect on historic resources," because it is obvious that construction will have an impact on the park. It is possible that the work may have "no adverse effect" but never "no effect." Recommend putting n/a in the "no effect on historic resources" column.

Prepared by Edward B. Cutler

#74462

Comments on **Best Management Practices (Section 2.5)**
Emerald Necklace Citizens Advisory Committee (CAC)

June 13, 2001

General Comments:

1. Secretary is looking for a pathway for protecting the resource of the Muddy River. CAC can help the Secretary convince the national government and other entities to fund this project. The Secretary is not interested in speed, but is interested in advice.

2. Comment made that we need to step back and look at broader issues.

3. Wherever eroded banks are referenced, include eroded paths.

4. The DEIR needs to state clearly and accurately which practices are currently implemented and which are possible alternatives.

5. Clarify that this section contains a laundry list and not recommendations. There should not be a differentiation between Best Management Practices and maintenance practices.

6. BMPs seem to be focused on water quality and need to address the other stated project objectives as well.

Detail Comments:

Section 2.5, p. 2-84, 2nd bullet needs to be more specific by adding "improve water quality in the Muddy River to a Class B level, thereby also contributing to the improvement of water quality in the Charles River."

Section 2.5, p. 2-84, add another bullet before the 5th bullet – "contribute to fishing and recreational uses in the Muddy River."

Section 2.5, p. 2-84, change "The selected alternatives are further described in Section 5.7 (not 5.6)". Check any other references in this section.

Section 2.5, p. 2-84. "A goal of the project is to reduce sediment loads by another 30%." The CAC was reluctant to set a higher goal, which would be desirable considering the effort and expense going into this project, and decided to request further information from the engineers to understand better the implications of asking for further reductions of sediment loads. Suggest making reference to the Emerald Necklace Master Plan and Olmsted's original design. The CAC recommends further explanation of the actual physical changes needed to achieve the 30% and support for arriving at this figure. For example, what would the cost of each change be, and how much would it reduce sediment loads.

Section 2.5.1, Table 2-2

General Comments –

change bullet symbol (printing as "T") to sequential numbers.

want table to be more clear. In addition to city/town and proponent responsibilities, also include and identify practices that apply specifically to Muddy River area, either in another column or a separate table. See Street Sweeping below.

Request analysis of what BMP's are being implemented/not implemented, either in a narrative or separate chart.

Detail Comments -

Illegal Sanitary Connections Remediation Program - request more current data than 1990 reference to illegal connections.

Residential Stormwater Monitoring Project – Recommendations should mention geese as well as dogs.

Section 3.0 – Stormwater and Sanitary Sewer Systems – there should be an explanatory footnote about 'NPDES'.

Particle Separators (Private) - clarify that $ft.^2$ = square ft. Add a description of how private parking compliance is maintained.

Commercial Area Stormwater Monitoring Project - include summary of the findings from the final report.

Street Sweeping – list of street sweeping activities is city-wide. Add detail on what street sweeping is now performed specifically in the project area. Currently street sweeping in the Fenway is resident-driven, and should be required and added to the recommendations.

Management of Public Open Space Maintenance Practices – Clarify what actions will be taken about oil leaking from the former Brookline DPW site.

Section 2.5.2 General Comment - The issues of future maintenance, its funding, and management under multiple jurisdictions needs to be addressed.

Section 2.5.2 p. 2-92 'Typical urban runoff – litter, animal waste (5% to 25%)'. Change this from text to a bullet.

Section 2.5.2 figure 2-40, Add this pie chart to the **Executive Summary** to emphasize that 85% of urban runoff is related to maintenance. Create a separate chart that shows just maintenance.

Section 2.5.2.1 Catchbasin Cleaning – Add funding source.

Section 2.5.2.1 p. 2-95 Catchbasin Cleaning – CAC requests that the MDC define and break down their budget for all maintenance items. Now, maintenance budgets are kept only by Division (Charles River).

Section 2.5.2.1 p. 2-95 Clarify definition of Pacheco law as it relates to MDC privatization issues.

Section 2.5.2.4 p. 2-96 "Most of the illicit connections have already been identified....." "Most" should be quantified.

Section 2.5.2.5, p. 2-97, suggest increasing frequency and number of hazardous waste collection sites and recommend institutional parking lots adjacent to the parks for possible collection sites.

Section 2.5.2.6, p. 2-97 (Lawn, Garden, and Park Maintenance) First and second bullets – why is MDC shown, and not proponents? Third bullet - question the accuracy of the statement about soil aeration being done in spring and fall. Add CAC recommendation that composting in Victory Gardens be moved up-land away from the river. Garbage should be removed in the fall.

Section 2.5.2.6, p. 2-97, Trail Maintenance - what efforts are being made to discourage dirt bike trails?

Section 2.5.2.7, p. 2-97 – typo in second last sentence, "very" should be "every"

Section 2.5.2.7, p 2-98 "City of Boston has comprehensive street sweeping program". What streets in the watershed are included? This should be more specific.

Section 2.5.2.8, p. 2-99 last sentence, change "investigating alternative methods of pavement deicing" to "developing alternative methods of pavement deicing".

Section 2.5.2.9, p. 2-99 Stormwater Bylaws - explain why there needs to be a designated feeding area for geese and ducks and provide more specifics on by-laws, and who will provide enforcement of pooper scooper laws.

Section 2.5.2.10, p. 2-99 Stormwater Guidelines……-- Clarify and quantify the proposed tax incentives.

Section 2.5.2.11, p. 2-100 Restoration of Eroded Banks (fifth bullet), change "would provide a method'', to "will provide a method".

Section 2.5.2.11, p. 2-100 Correcting MDC curb settings (sixth bullet), change "which should be incorporated", to "which will be incorporated".

Section 2.5.2.11, p. 2-100, Add bullet to keep oil runoff from streets out of the river in Boston and Brookline, including oil separators.

Section 2.5.3, p. 2-101 Treatment Control Options - need to include maintenance details of evaluating various BMPs.

Section 2.5.3, p 2-101, last paragraph - the scope of the Center for Watershed Protection Study should be broader. Village Brook study may be too specific.

Section 2.5.3, p 2-103 (Treatment Control Options – In-line Sewer Treatment Devices). Section specifics on whose doing water quality testing and with what money.

Section 2.5.4, p. 2-105 Summary of BMP Alternatives - Last sentence should be more specific. Add text "consistent with recommendations in Section 5".

Section 2.5.4.1, p. 2-106 Selected Source Control BMPs – 4th bullet "Maintain restored banks, pathways and uplands (BPRD and Brookline)'. Add "with particular care and attention to active recreation areas adjacent to water (i.e. Daisy Field)".

Section 2.6, p. 2-109, Screening of the Project Alternatives and Selection of the Recommended Plans – "It includes full bank to bank dredging....list," add text "and restoration of historic structures, such as the Carlton Street Footbridge".

Prepared by Hugh Mattison

#74463

Comments on

Best Management Practices for Stormwater Runoff (Section 5.7)

Emerald Necklace Citizens Advisory Committee (CAC)

General Comments:

1. CAC is concerned about the ability of BPRD to commit to completing the BMPs based on assurances from other departments and the MDC. This is a weakness in the process and compromises the proponents' authority and potential success of the project.
2. The organization of the BMPs in the DEIR is scattered through different sections. There is no clear explanation of how they will work, when they will be implemented, what they will cost, and how they will be paid for. A chart detailing the problem, sources, jurisdiction, remediation, cost, funding sources, and dates for implementation would be useful.
3. Instead of stating that owners "should", the document should state it "is necessary" for owners to..... Language needs to be strengthened. References should be made to sections that describe how these recommendations will be enforced.
4. Section 8 (Management and Maintenance) reflects the CAC's desire for more specifics.
5. There should be a commitment in the document from the City of Boston and Town of Brookline. For example, they will do what, with what budget. The DEIR presents recommendations from consultants, not a commitment by proponents to follow these recommendations. If Brookline Town Meeting does not vote for budget, what is the remedy**?** How do the proponents plan to deal with this potential problem?
6. Information about the anticipated costs of BMP's for future years should be provided by the City of Boston and Town of Brookline. Both BMP capital improvements and BMP maintenance costs should be shown. See Section 8.11.3, page 8-40 for BMP cost chart (this chart is not adequate). Note – Bruce Conklin (CDM) commented that if the department has sufficient staff and resources, it was assumed that there will be no additional costs and therefore the costs were not broken down in DEIR. If departments did not have sufficient staff, equipment or maintenance, then the increased costs for these needed resources were identified in DEIR. CAC questioned this assumption. Was evidence provided by field observation, or merely by interview? There should be more information *from the consultants* as to whether sufficient resources exist.
7. Scope/boundaries of project - will be further discussed under Funding Strategy (Section 10). How will eroded upland slopes located beyond the

project boundary be addressed? Note – Laura Rome commented that the Project "extends well beyond the banks of the river to include the historical landscape as well."

8. Public Education – The CAC would like to see descriptive boards and signage describing the project and types of equipment used in restoration.
9. Would like to see a visual included, showing project boundaries with shaded and unshaded areas.
10. Section 8, Management and Maintenance – How will park maintenance be insured and enforced in the future without citizen oversight? The CAC felt that its continued involvement or that of a similar body would be helpful.

Detail Comments:

Section 5.7.1, p. 5-57, Basin-wide Source Control BMPs:

General Comment: How can this be enforced?

1st bullet - water quality samples should be taken more frequently than annually and should be consistent with the frequency of sampling described in section 8. Samples should be taken consistently from the same sites to allow historical tracking. See Section 8 for relevant language.

2nd bullet - reword this section, strengthen language. Replace "should" with "is necessary" or "is recommended".

3rd bullet - Who is going to coordinate information for the amount of de-icing products and how will these be implemented and enforced?

5th bullet p. 5-59 – how will trail maintenance to correct desire lines and prevent erosion be addressed beyond the boundaries of the project?

Section 5.7.2 p. 5-59 Basin-wide Treatment Control BMPs - Discussion about pilot program and particle separators and questions to Bruce Conklin (CDM). Money is available for four additional particle separators if needed. Each separator costs $8-900,000.

Section 5.7.3 p. 5-59 Charlesgate – Identify what, if any, current BMP's exist in the Charlesgate area.

Section 5.7.3, p. 5-59, last sentence – Add "repair", along with street sweeping and catch basin cleaning.

Section 5.7.4.1, p. 5-60 Back Bay Fens, Source Control BMPs - first paragraph – "compost" should be changed to "yard waste/plant waste/garden waste", and it should be removed more frequently.

Section 5.7.4.1 – Victory Gardens is a private entity, which will need to enforce pesticide control. The Parks Department does have jurisdiction over the Garden Society. Fran Beatty noted they have discussion each year with the Victory Gardens. This is an important area for public education and should be coordinated with the Victory Gardens.

Section 5.7.4.2, Table 5-7 – Victory Gardens dredging volumes (12,445) seem high. Bruce Conklin (CDM) is going check the levels referenced in the table.

Section 5.7.7.2 p. 5-63 Willow Pond Treatment Control BMPs - is there any BMP related to the West Nile Virus in Willow Pond? Willow Pond was the center of the mosquito infestation in 2000.

Section 5.7.8 p.5-64 Enforcement and Monitoring of BMPs – The CAC is concerned about MDC ability to maintain parkways and their need for funding (Parking Lot to address the need for MDC funding). John Burckhardt reports that Samantha Overton is prepared to implement catch basin improvements. (Source of funding was not specified.)

Section 5.7.8, p 5-64 – need to reword last sentence in first paragraph, their dogs instead of themselves.

Section 5.7.8, first (litter control) and fourth (monitoring of BMPs) paragraphs – CAC would like to know what enforcement will be provided if BMP practices are not maintained.

Section 5.7.8, third paragraph – suggest that the last sentence does not belong here, not "fail to provide budget…". What steps are they taking to provide budget for operation and maintenance costs?

Section 5.7.8, first bullet – clarify what "annually" means. Does the "annual" program include quarterly sampling?

Prepared by Hugh Mattison

#74464

Comments on **Management and Maintenance Plan (Section 8)**
Emerald Necklace Citizens Advisory Committee (CAC)

June 4, 2001

Management & Maintenance

- Hugh Mattison made a presentation on park maintenance. Hugh also handed around photos and a manual on park maintenance. Hugh suggested that the CAC consider recommending Option 1 (from a slide) that the CAC continue role as ombudsperson, with escalation to Options 2 and 3 if results of maintenance do not satisfy CAC. A printed version of the presentation was distributed to the CAC May 15, 2001.

Slide from PowerPoint presentation by Hugh Mattison on park maintenance with the proposal (see below) that the CAC recommend option 1, with escalation to Options 2 or 3 if results of maintenance don't satisfy CAC.

Option	Level of Complexity	Time to Implement
1. CAC continues role as ombudsman	Low	Short
2. EOEA creates new Division	Medium	Medium
3. Legislature creates new Emerald Necklace authority	High	Long

- The CAC requested that the proponents find funds to enable the CAC to hire consultants to conduct an analysis of resources needed to maintain BMPs and other regular park maintenance activities, as outlined in Arlene Mattison's memo.
- Such a consultant is now being hired. Section 8 will need to be revised to incorporate the information provided in the consultant's report.
- **Section 8.1, p 8-3, CAC should be included in list of groups for the Maintenance and Management Plan.**
- **Section 8.1, p 8-3, number 5, identify the intended "park partners" and "private parties"?**
- **General Comment: Not enough staff, funding and training for staff for maintenance of the park.**

- Bruce – The CAC has a role as part of the MEPA advisory process.
- Fran Gershwin noted that CAC could request modification of the Secretarial Certificate from CAC annual updates to quarterly updates with access and meetings with proponents.
- **CAC suggested that they might want to have an independent advisory role for management and maintenance throughout the year, perhaps meeting quarterly, in addition to the MEPA annual review.** This concept was triggered by the statement in Section 5.7.8, p. 5-62, (Enforcement and Monitoring of BMPs), "in terms of source control BMPs, municipalities may allot large sums of money to design and construction costs, but fail to provide budget for operation and maintenance costs, which can range anywhere from 3% to 10% of the construction costs....the responsibility for enforcement and monitoring of BMPs rests on the project proponents." (See Arlene Mattison's memo of June 3, 2001)
- Betsy Shure Gross noted that it is up to the CAC to suggest how funding is tied to accountability.
- **The CAC requested clarification about the authority of the Secretary of EOEA, specifically what recourse is available to the Secretary if the proponents do not fulfill their management and maintenance obligations? What are the repercussions? What or who is the accountable entity?** Eileen Woodford commented that there were two levels of discussion. One level is about how the area is managed: who, what, how, cost, accountability, structure, and noted that the current practices are deficient. The other level is that management and maintenance practices by committee will not work.
- If the proponent does not fulfill its obligations, does the Secretary have the power to withhold money and use it to hire out a private contractor? Can monies due to the municipalities from the state Lottery be withheld to complete tasks not finished by the proponents?
- **CAC may recommend a modification in MEPA process to ensure accountability.**
- **General Comment**: Section 8 is missing connections between overall maintenance needs and how those goals will be achieved, including a sense of priorities. The section needs to explain more clearly the intended result, especially in reference to the desired character of the landscape.
- **General Comment:** Section 8 is too generic and will not maintain the character of Olmsted's unique landscape.

- **In order to maintain the park as Olmsted intended, it is necessary that maintenance workers be given specialized training specific to this landscape, including a skills development piece.**

- Eileen suggested exploration of two options: 1) centralized administration of the park e.g. an authority that has responsibility and accountability to oversee park maintenance and management 2) establishment of a trust.

- Ed Burke suggested that the BMP section be put into one section.

- **CAC requested information about how other park models with multiple jurisdictions (eg Santa Monica, Blackstone, Harbor Islands) and other historic Olmsted parks (eg Central Park, Prospect Park) operate and are maintained. Specifically, how do they deal with park management and maintenance, jurisdiction, authority and enforcement issues? CAC would like to have this information to review within the next few weeks.**

- CAC agrees with Hugh's recommendation for the Annual Maintenance Chart, defined in terms of historic landscapes rather than only a generic park. Hugh's chart (see below) is not an exhaustive list and could include more maintenance tasks. Hugh's memo provides more details.

	Jurisdiction			Unit of Measure	Number of Units	Current Cost	Additional Cost	Total Cost
Task	Boston	Brookline	MDC					
Back Bay Fens				Acres				
Parkland				Acres				
Maintenance Level A								
Maintenance Level B								
Maintenance Level C								
Watering				Acres				
Graffiti removal				Hours				
Trash removal				Hours				
Planting beds				Square ft				
Active Recreation				Acres				
Woodland				Acres				
Tree pruning				Count				
Parkways				Linear ft				
Tree pruning				Count				

- The CAC requested that Table 8-4 and Table 8.5 be modified based on actual field observations and information filled in for Hugh's chart (Memo will be distributed separately).

- Section 8.4.3, p 8-25 (Management of Invasive Vegetation) Use of pesticides should be reviewed and approved as a public process. (Suzanne Comtois)

Summary of Consensus Comments:

The CAC reached consensus on the following comments:

1. *Section 8:* Section 8 is inadequate, in terms of accuracy as to current maintenance practices and in failing to indicate the management and maintenance practices needed to maintain the uniqueness of this park. There is a lack of connection between overall needs, methods to maintain the uniqueness of the Olmsted's park as opposed to a regular park, and priorities for management and maintenance practices. Strong concern was expressed about a lack of information as to staff, funding, resources and adequate training for staff.

2. *Future Role of CAC:* The CAC would like to explore the future role of the CAC with respect to overseeing park management and maintenance. In addition to the CAC playing an advisory role to the Secretary concerning the MEPA Annual Update, several options were discussed, such as meeting on a quarterly basis with the proponents.

3. *Accountability and Enforcement:* The CAC would like clarification about the Secretary's authority for enforcement of park management and maintenance on this project.

4. *Administration:* CAC wants to explore two methods for oversight of park management and maintenance: multi-jurisdictional and a centralized authority. The CAC has requested that the proponents provide information on management models for other multi-jurisdictional parks as well as a few examples of other Olmsted Parks.

5. *Information* – The CAC would like to see more specific information and figures for the management and maintenance and best management practices for the Emerald Necklace (as requested in the charts in Hugh's memo and Freddie's BMP memos).

Prepared by Hugh Mattison
6/13/01

#74465

Comments on **Funding (Section 10)**
Emerald Necklace Citizens Advisory Committee (CAC)

June 25, 2001

Some General Comments:

- This section should clearly reflect how much funding can realistically be secured from various funding sources, so the municipalities can realize the level of their required contributions.
- This whole section needs more work
- The section does not address capital funding issues as well as maintenance funding issues.

The CAC is very concerned that the proponents will create a segmented project by moving the fast-track portion of the project forward, without having received information on the funding for other sections. The proponents need to clarify all funding issues before moving forward with the first sections of the project.

DEIR needs to include the proponents' plan for how all necessary funding (both capital and maintenance) can be achieved.

Section should clearly identify which funding sources are actively being pursued by the proponents.

Capital and maintenance funding issues should be divided and covered in separate sub-sections. Maintenance needs funding source table like Table 10.2.

In identifying funds available from various sources, proponents should identify overhead or administrative costs included in grant money to be sure that the entire project cost is covered.

The proponents should list themselves as a funding source, particularly for the capital portion of the project. The City and Towns will lose credibility when they ask for money from the private sector, if they do not contribute financially.

The proponents need to strengthen the public/private partnership model:

- The final paragraph of Section 10.2, as written, and Section 10.10 limit partnerships to connections between institutions and the Boston Parks and Recreation Department. Both sections should include additional institutions and also include other organizations such as private developers, neighborhood and environmental groups.
- These sections should address the authority that the Town of Brookline may have to form public/private partnerships as well.
- Furthermore, partnerships with institutions and private entities should also be pursued for collection of funds for the capital project as well as the

creation of a maintenance endowment. The proponents should establish a list of institutions that may donate to the capital fund, and encourage formalized relationships with these institutions.

- Proponent should provide clear expectations for funding needs (capital vs. maintenance) from educational, cultural, medical and private development institutions.
- All public/private partnerships relating to maintenance should be memorialized with formal written agreements, rather than relying upon the good will of the private group.

Section 10.4.3, should be deleted or reworded to read "There is unlikely to be additional funding, unless another significant rain event occurs . . . "

On Section 10.8:

- The proponents need to develop and implement a legislative strategy to cover funding for the capital project and a management approach, similar to that proposed on the Federal, congressional level. This should be addressed in the document.
- The proponents should seek out all potential options for state legislation to cover any funding gaps in the capital costs of the project. The proponents need to be creative; if there is a revenue stream (such as a tax increment finance mechanism) to pay back the bonds, then it may easier to put together support for general obligation bonds.

Section 10.9, addresses funding for BMPs but does not address funding for general maintenance and monitoring. Funding for a comprehensive maintenance plan should be a part of this section.

Section 10.10, Emerald Necklace Conservancy is mentioned, but their role is not articulated. The proponents should clarify this.

In Table 10-2:

- The second listing of City of Boston should be Brookline.
- There needs to be a reality check to determine the proportion or percentage of funds that are available from each source.
- Arrange Table 10-2 into tiers that subdivide funding sources by level of contribution.
- Some CAC members question the accuracy of amounts that could be awarded.

#74466

Prepared by George Proakis, Marian Sabal, Fran Gershwin

Comments on **Parking Lot Issues**
Emerald Necklace Citizens Advisory Committee (CAC)

As of June 13, 2001

May 5, 2001 Meeting

- P. 2-97, 2.5.2.6 First part of section is inaccurate, should include responsibilities of all proponents and other responsible parties, in the form of list/chart. Within actions, "should" vs. "is" needs to be clarified. All proponents and responsible parties should be held to equal standard in regards to maintenance and management. Parking Lot: revisit in BMP's discussion.
- Parking Lot: Discuss MDC Issues at June 13 Meeting on Miscellaneous topic. Request a rep from MDC to provide information on accountability of MDC at June 13 Meeting.

May 7, 2001

- 5.1 on p. 5-2, "installation of new park benches and trash cans." "Virtual" Parking Lot.
- The proponent should work with CAC to come up with a process that involves MDC and other appropriate agencies or entities (move to parking lot).

May 16, 2001

- Parking Lot: Recommend process be put in place for site inspection and checking of vegetation prior to transfer from contractor to municipalities to ensure the vegetation is in good shape when the contract is done.
- Section 6.4.1, second to last paragraph, need to include more strategies for discouraging geese, in addition to the strategy of planting vegetation. Planting will be done consistent with historic intent. Planting alone may not solve the geese problem. Parking Lot:: May need protective fencing until vegetation is established.

May 21, 2001

- Section 2.5.2.1, last paragraph, inaccurate explanation of law. Need to revise. Recommendations need to be included in Parking Lot.
- General Comment, need to raise issues of future maintenance and funding under multiple jurisdictions, Parking Lot.

May 30, 2001

- Parking Lot: Public Education – CAC would like to see descriptive boards and signage describing the project and types of equipment used in restoration.
- Section 5.7.4.1 – Victory Gardens are a private entity who will need to enforce pesticide control. The Parks Department does have jurisdiction over the Garden Society. Fran noted they have discussion each year with the Victory Gardens. Public education should be coordination with the Victory Gardens (Parking Lot).
- CAC is concerned about MDC's ability to maintain parkways and their need for funding (Parking Lot to address the need for MDC funding).

June 13, 2001

- Parking Lot, CAC has concern re. accountability, especially during construction management.

#74457

MEMORANDUM

DATE: August 21, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Restoration

RE: **Project Update**

We are about at the midpoint between our last CAC Meeting (July 18, 2001) and the startup of the fall meetings in September. As such, I thought an update on the project status was in order. The topics are:

1. CAC Comment Letter
2. Comment letter received from George Haggerty of the CAC
3. Updated CAC List
4. Park Management & Maintenance Update
5. Site Walk with Tim Marshall (August 4, 2001)
6. Fall Meeting Topics
7. DEIR Preparation
8. Charlesgate Design

1. CAC Comment Letter

This letter summarizes the CAC's review of the "pre-filing" Draft Environmental Impact Report (DEIR), which occurred over 12 meetings held weekly between April 23, 2001 and July 18, 2001. The letter was compiled by Fran Gershwin and Richard Heath of the CAC. Copies of this letter will be distributed under separate cover.

The letter includes the various comments made by the CAC in these meetings and includes a cover letter emphasizing the major points. The letter is addressed to the project proponents, the Boston Parks and Recreation Department and the Town of Brookline.

2. Park Management & Maintenance Update

George Haggerty has asked that I distribute his comment letter (attached).

3. Updated CAC List

Kelly Brilliant, new Executive Director of the Fenway Alliance, will replace Paul Mentag on the CAC. *An updated CAC List is attached.*

4. Park Management & Maintenance Update

In response to the CAC's comments and concerns, Tim Marshall of ETM Associates, LLC, has been retained to develop a park maintenance plan for the Emerald Necklace contiguous to the Muddy River (Wards Pond to Charlesgate). Tim was introduced to the CAC at the July 18, 2001 meeting.

On Saturday, August 4th, Tim walked the project area with members of the CAC. See discussion below. Tim also met with maintenance and management staff from Brookline and Boston on August 3rd. Tim will be meeting with MDC staff on August 23rd.

Currently, the parks from Wards Pond through Charlesgate fall under three jurisdictions: Boston, Brookline and the MDC. In response to the CAC's comments that alternative management models be considered, the firm of Brown and Rowe has been tasked with developing a summary of the existing management models in other park systems that may be applicable to Boston's Emerald Necklace. The firm will make queries of other park systems that have multiple jurisdictions and/or active public/private partnerships. After a review and screening process, the DEIR will include possible alternative management models that could feasibly be implemented for the Muddy River parks.

At this time, we anticipate having both consultants present their findings and draft recommendations to the CAC in September.

5. *Site Walk with Tim Marshall (August 4, 2001)*

The walk began at the parking area on the Brookline side of Leverett Pond on a rainy Saturday morning. Walking past Willow and Wards Ponds on the Brookline side, the walk continued north on the Boston side past Leverett Pond and on to the Riverway and the Back Bay Fens, ending in the Charlesgate area. Seven members of the CAC attended and discussed with Tim their issues and concerns regarding maintenance practices. A summary of the walk will be distributed to CAC members in a future mailing.

6. *Fall Meeting Topics*

Schedule is subject to change:

Approximate Date (subject to change)	**Topic(s)**
September	**Draft Findings and Recommendations Regarding Management & Maintenance**
October	-CAC's questions for EOEA/MEPA -Approach to Review of "filing" DEIR -Charlesgate Final Design
October/ November	Review of "filing" DEIR
October/ November	Public Meeting(s) on DEIR
Fall or early winter	Public Meeting regarding Charlesgate construction

Look for a meeting announcement in early September.

7. *DEIR Preparation*

CDM has begun incorporating the CAC's comments into a revised DEIR for filing. The last element to add with be the revised material regarding management and maintenance. Presently, the proponents anticipate filing the DEIR this fall.

8. *Charlesgate Design*

CDM is preparing the construction drawings and specifications for the Charlesgate dredging contract. The proponents reviewed a 75% submittal in July.

The work is funded with a grant from the Federal Emergency Management Agency (FEMA) and matched with funds from the Massachusetts Department of Environmental Management (DEM) and the Boston Water and Sewer Commission (BWSC). Time is running out on the grant, however, as FEMA has informed us that the construction work must be completed by the end of 2002.

At the present time, we anticipated completing design this fall. The permitting will begin this fall; however, the permits will not be issued until after the Certificate on the DEIR is received. Construction would occur during 2002.

In order to inform the public about the expected impacts and duration of construction, the proponents with the MDC will sponsor a public meeting on this topic. The goal will be to reach residents of the Charlesgate area, especially those who have not been following the project's progress. *I would ask the CAC member if you know of individuals and/or organizations in the Charlesgate area, please forward the names and addresses to me.*

Comments and Questions

As always, the CAC should address any comments and questions on the project to me as follows:

John F. Burckardt
Project Manager, Muddy River Restoration Project
c/o Boston Parks and Recreation Department
1010 Massachusetts Avenue
Boston, MA 02118
(617) 635-4505 x6517
jburckardt@ci.boston.ma.us

Attachments

- Comment Letter from George Haggerty
- Updated CAC List

E-Mail Message

From: George Hagerty [georgehagerty@msn.com]
Sent: Sunday, August 12, 2001 9:55 PM
To: JBURCKARDT@ci.boston.ma.us

John,

I will be out of the country on behalf of the MFA from August 13 to September 11, 2001.

Please distribute the enclosed to the committee members and copy Betsy and Bruce and anyone else you think appropriate on the committee/consultant teams. The letter represents some thoughts and concerns I have had as we await the completed DEIR in the fall.

Many thanks,
George

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Open CAC letter.doc

GEORGE HAGERTY
FENWAY STUDIOS
A National Historic Landmark
c/o 646 Central Street Stoughton, MA 02072
Studio: 617-247-3508/Home: 781-344-9564/Fax: 781-341-8808

Emerald Necklace/Muddy River Citizens Advisory Committee
C/o Mr. John Burckardt, Project Manager
Muddy River Restoration Project
Boston Parks Department
1010 Massachusetts Avenue
Boston, MA 02118

July 21, 2001

Dear Members:

In response to repeated CAC discussions about the differences between "curb-to-curb" and "bank-to-bank" historic resource rehabilitation for the Emerald Necklace, I would like to offer the following comments.

As indicated in the Executive Office of Environmental Affairs Certificate, Emerald Necklace Environmental Improvements Master Plan and ***Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement*** (emphasis mine), Secretary Durand clearly states that "the purpose of the project is to ensure the continued restoration of Olmsted's Emerald Necklace in its entirety."

However, the Secretary goes on to say (all emphasis mine):

> "This Certificate ***does not require*** the EIR to analyze the impacts of certain projects identified in the Master Plan attached to the ENF (for example dredging in ponds above the Muddy River), as the proponent does not intend to move ahead with this work in the near-term, and background conditions may change significantly before that work is ready to proceed.
> Although I am sensitive to the concerns about and appearance of segmentation of the project, the pieces of work hereby excluded form the EIR are ***discrete projects that may proceed independently*** of the main body of work, ***or not at all.***
> Further, I expect that ***the procedures developed during the review, permitting, and implementation of the EIR project*** will inform and likely simplify the review of those later projects."

For this committee member, it is clear that the Secretary has the interest and betterment of the entire Emerald Necklace at heart, all the while acknowledging and understanding the definitive scope of the flooding and water quality aspects of this, the current Phase I project.

Under the heading Historic Resources and Landscape Restoration he states (all emphasis mine):

> "The ENF ***proposes an ambitious, long-term plan to restore the historic designed park landscape, following completion of the flood control portion of the project.***
> "The EIR should describe the landscape restoration project in greater detail, ***including the proposed sequence of restoration projects and plans that demonstrate at least a conceptual level development.***
> "I anticipate that this portion of the EIR will consist of the "Emerald Necklace Master Plan..."

It is widely acknowledged that the 1989/1999 Master Plan prepared by Walmsley/Pressley will serve as "the continuum" for the rehabilitation, preservation and care of the Emerald Necklace parks. This document will provide the envelope in which future "bank-to-bank" and or "curb-to-curb" work would take place.

While appreciating the many individuals, both CAC and public-at-large, who have dedicated substantial amounts of time towards the care, preservation and the now hoped for rehabilitation of this resource, this committee member is frustrated and concerned with the repeated and dogged approach taken towards viewing the limits of these suggested Phase I improvements.

As referenced under the Stormwater/Water Quality Improvements, Phragmites, and Maintenance headings of the Certificate, Secretary Durand expects "the EIR to include a comprehensive maintenance management plan to be implemented by Boston and Brookline throughout the watershed of the Muddy River to ensure continuing effectiveness of any stormwater or water quality improvement measures and prevent new siltation, and it should specifically identify funding sources for ongoing, long-term implementation of the maintenance plan."

Accordingly, I wholeheartedly concur with, and support, the proponents hiring of sub-consultants Tim Marshall and Clarissa Rowe at the CAC's request, to draft such a maintenance and management plan for the DEIR. I, along with you, eagerly await their findings and report(s).

However, I steadfastly remain unconvinced, unable and unwilling to hobble the existing flooding/water quality project with attendant, associated and or unnecessary additions to the scope of work as described in the preliminary DEIR. Having more than doubled in size from over $43 million to over $91million through the course of technical analysis and engineering (as yet *only* 30% designed!), this capital project portends to be the largest parks improvement project in the Northeast. I am deeply troubled that the ongoing debate will substantially alter the scope of this project, rendering it impossible to fund and complete. It is my understanding that the Secretary cannot initiate or force a proponent to undertake or fund a specific project, rather he reviews, comments upon and oversees the implementation of projects when proposed by others. If the CAC persists in increasing the scale and scope of the proposed project, it may become unaffordable by the proponents, associated grantors and hence withdrawn or permanently delayed.

It is therefore my understanding and agreement with the Secretary's Certificate that the Phase I project be allowed to move forward and through the development of the Phase I DIER/EIR, *significant issues be raised that will inform and guide future phases.* To mediate the repeated and overarching concerns of CAC members, it may behoove us to consider the ENF's suggestion of a Master Plan CAC to do this work. We may want to ask the Secretary why this format was not followed, and indicate frustration with limiting our current purview and discourse strictly to Phase I issues.

Please understand that this letter in no way seeks to discount the comments or testimony of fellow CAC members and or the public-at-large. Rather, it is one member's attempt to navigate the system of checks and balances initiated by the Secretary and to discharge his duty appropriately. I am mindful of, and share in your disgust for the degraded state of the Muddy River and feel lucky to have encountered and learned from the passion, commitment and hope so many of you bring to the table.

As one who has lived hard by the side of the Muddy river at Charlesgate for fifteen years, I wish very strongly to see this project advance and most importantly to see the goodwill, good efforts and good practices that it will generate spur the proponents, as well as others, to commence subsequent phases and to finally restore this abused gem in Olmsted's legacy. For this reader, nothing in CDM's report to date leads me to believe that they will desecrate, destroy or otherwise disrespect the historic nature of these parks without appropriate remedy. While understanding the proponents past lack of management, I would respectfully ask the members to realize that they have indeed come together to initiate this project, have made significant progress on improving conditions, and that the CAC, as well as the Secretary, needs to work with, not against these current stewards.

As mentioned in many comments, both oral and written, I have consistently supported Richard Heath's thesis and method of analysis that a separate Emerald Necklace Authority be created. However, I feel it is not in the best interests of the CAC, or the public-at-large, to penalize the current stewards now, for their past representatives' poor management of the resource. Rather, I would very much like to see this project and others, as overseen by the Secretary, establish the long-term concerns and methods of approach to proper stewardship for the future.

I would propose, during a five-year interregnum (approximately during completion of Phase I) that a thorough review of the annual (or quarterly) updates be taken and, at the end of that time, the decision to establish such an authority be made by the public and their elected representatives. In the interim and perhaps building on the ETM and Rowe reports, the CAC should use this period to investigate, review and establish a method for implementing, staffing and funding such a body. The ongoing work of such study, and the completed work products therein would do much to remind the proponents of the CAC's and publics ongoing concern for these resources.

Finally, and without entering into great detail, suffice to say that this committee member has directly suffered under the abuses of such an independent authority. Without great care in the proper establishment of adequate checks and balances (sufficient board size, appropriate representation, public review, standard accounting procedures), these authorities can, have and will stretch the limits of representative democracy and should not be employed out of frustration or even, as a last resort.

In closing, realizing that I had left out a not insignificant fact from my brief introduction to you all so many months ago, it should be known that my great grandfather, William P. Long, was the Park Commissioner of Boston during the 1930's and 40's and from the photographs shown us by Marion Pressley, albeit in a mature phase of establishment, the parks under his stewardship were certainly cared for in a manner requisite with that of a future national historic park system. This is the legacy and pride of stewardship I seek to reestablish, one project at a time.

Respectfully submitted,

George Hagerty

CC: Betsy Shure Gross, EOEA
Bruce Conklin, CDM

File Copy

MEMORANDUM

DATE: September 25, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Rehabilitation

RE: Meeting Notice, Other Information

Wednesday, October 3, 2001

Maureen and Richard J. Egan Engineering /Science Research Center
Raytheon Amphitheater -- Room 240
NORTHEASTERN UNIVERSITY CAMPUS

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topic:
- --Project Update
- --Discussion with Laura Rome, MEPA Office

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:00 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

FILE COPY

Emerald Necklace Citizen's Advisory Committee
Northeastern University, Egan Engineering /Science Research Center
Raytheon Amphitheater — Room 240

Wednesday, October 3, 2001
6:00p.m. - 8:00p.m

Agenda

I. **Welcome, Opening Remarks & Comments Received** 6:00 - 6:15

Jane Wells*, MA Office of Dispute Resolution, CAC Facilitator*

John Burckardt*, PE, Project Manager*

II. **Project Update** 6:15 – 6:30

John Burckardt*, PE, Project Manager*

III. **Conversation with Laura Rome, MEPA Office**

Jane Wells*, MA Office of Dispute Resolution, CAC Facilitator*

6:30 – 8:00

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Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – October 3, 2001 CAC Meeting

Attendance
See Attachment 1

Project Update
John Burckardt, PE, Project Manager

- John Burckardt presented a status report on Tim Marshall's consulting work.

- Margaret Dyson replaces Fran Beatty. Margaret, a former CAC member and President of Historic Massachusetts, Inc., is knowledgeable on Parks issues and up to speed on the project.

Tim Marshall's work:

- Tim Marshall had a site walk on August 4th, 7-8 people from the CAC assessed the current situation and the work that needs to be accomplished. Tim has worked out jurisdiction issues with colored maps to show areas.

Staffing:

- What is the level of maintenance needed, the workload gap and how we will get there? What is the standard for the Emerald Necklace?
- John noted that the goal is to keep the park well maintained. Tim does not have enough data but in 3 weeks he will have a draft ready and will get the information out to members beforehand.
- Clarissa Rowe is talking to the Park Systems, reviewing preliminary findings and will work toward a meeting in a few weeks.
- CAC input into consultants reports: Tim needs to verify numbers for the early draft and then CAC members will have a chance to review his report. Tim will have a sense of the existing workload and existing level of management. Arlene Mattison asked for contact with Tim on Hugh Mattison's behalf.

DEIR

- Revisions are being made, and drafts of the reports will be checked against CAC comments. The time frame is looking more like November.
- Discussions with regulatory agencies are needed and still in process.

Charlegate

- Once the EIR is in and accepted, work will proceed with Charlesgate as an early project.

- A CAC member asked if there would be early action on Charlesgate by the spring of next year? Work can be expected by late spring or summer. John noted that conditions from the DEIR certificate and from the permits would have to be incorporated into documents before accepting the bids. FEMA, which is providing funds for Charlesgate, has stated that Charlesgate must be substantially done by the end of the calendar year 2002.
- Federal funds with the Army Corps of Engineers for flood control and environmental improvements will be sought for the remainder of the project.
- Meetings every month with the Army Corps are being held to move the process along. In December, the draft of a decision document will outline how much and what kind of funding the Corps can contribute to the project, based on the Corps' mandates for flood control and environmental and habitat improvements..

CAC Replacements:
Will Historic Massachusetts, Inc make a suggestion for a replacement on the CAC for Margaret Dyson? John noted that there is an opportunity for replacement. Laura will verify that the HMI seat is for the organization. If so, the organization can designate a new representative on the CAC.

Funding: A CAC member asked if formal steps being taken by the proponents for a plan to fund the project? John reported that local funding to supplement the Corps' funds will include contributions from the state and municipalities, and an acceptable formula is being worked on now. The amount for the Army Corps is not yet known, but by using a range of possible Corps amounts, the non-federal amounts can be estimated. The details are still being worked out.

Attachments:
Attachment 1: sign-in sheet.

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

October 3, 2001

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Kelly	Brilliant	Fenway Alliance	
Edward	Burke	Restore Olmsted's Waterway Coalition	Edward A. Burke
Isabella M.	Callanan	Friends of the Muddy River	
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Margaret	Dyson	Historic Massachusetts	
Frances Allou	Gershwin	Mahoney Hawkes LLP	
Alan	Goodman	The Abbey Group	
✓George	Hagerty	Fenway Studios,Inc.	
✓June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Richard	Heath		
Gary R.	Hilderbrand	Reed Hilderbrand Associates, Inc.	

Emerald Necklace Citizens Advisory Committee
Meeting
October 3, 2001

Sign-In Sheet

Name		Affiliation	Signature
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Areine	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	
Lauren	Meier		
Jane	Pfister	Brookline Resident	
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

October 3, 2001

\\parksmai\bospark\Muddy\CAC Meetings\CAC-29 Oct 3 2001\[CAC Sign-in 10-3-01.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
John Burckardt	Parsons Brinckerhoff c/o Boston Parks	x6517 617-635-4505	jburckardt@ ci.boston.ma.us
Laura Rome	EOEA/MEPA	617-626-1030	laura.rome@ state.ma.us
JANE Wells	MODR	617-727-2224	
Jeannie Adams	MODR	X21172 617 727-2224,	X21177
Allan Mattison	ENC	617 232 6083	abkm @ AOL
Francis Allyn Gershwin		617 210-1499	fgershwin @mahoneyhawkes.c
A Perez	NAOP	51 Stell. -	617 4[illegible]-1261
Dudley Bonsal	CRWA	617 965-5975 x 232	dbonsal@crwa.org
Thomas Brady	Town of Brookline	617-730-2088	

Page 3 of 3

MEMORANDUM

DATE: October 24, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Rehabilitation

RE: Meeting Notice

Please Note Location!

Monday, October 29, 2001

Kerr Hall,
96 The Fenway
Northeastern University Faculty Center

~ ~ ~ ~ ~ ~ **See Map on Back!** ~ ~ ~ ~ ~ ~

Agenda Topics: Update on Management & Maintenance
Discussion of Draft Maintenance Plan (Tim Marshall)
Overview of Park Management (Clarissa Rowe)

5:45 p.m. Refreshments
6:00 p.m. Presentation & Discussion
8:30 p.m. Adjourn

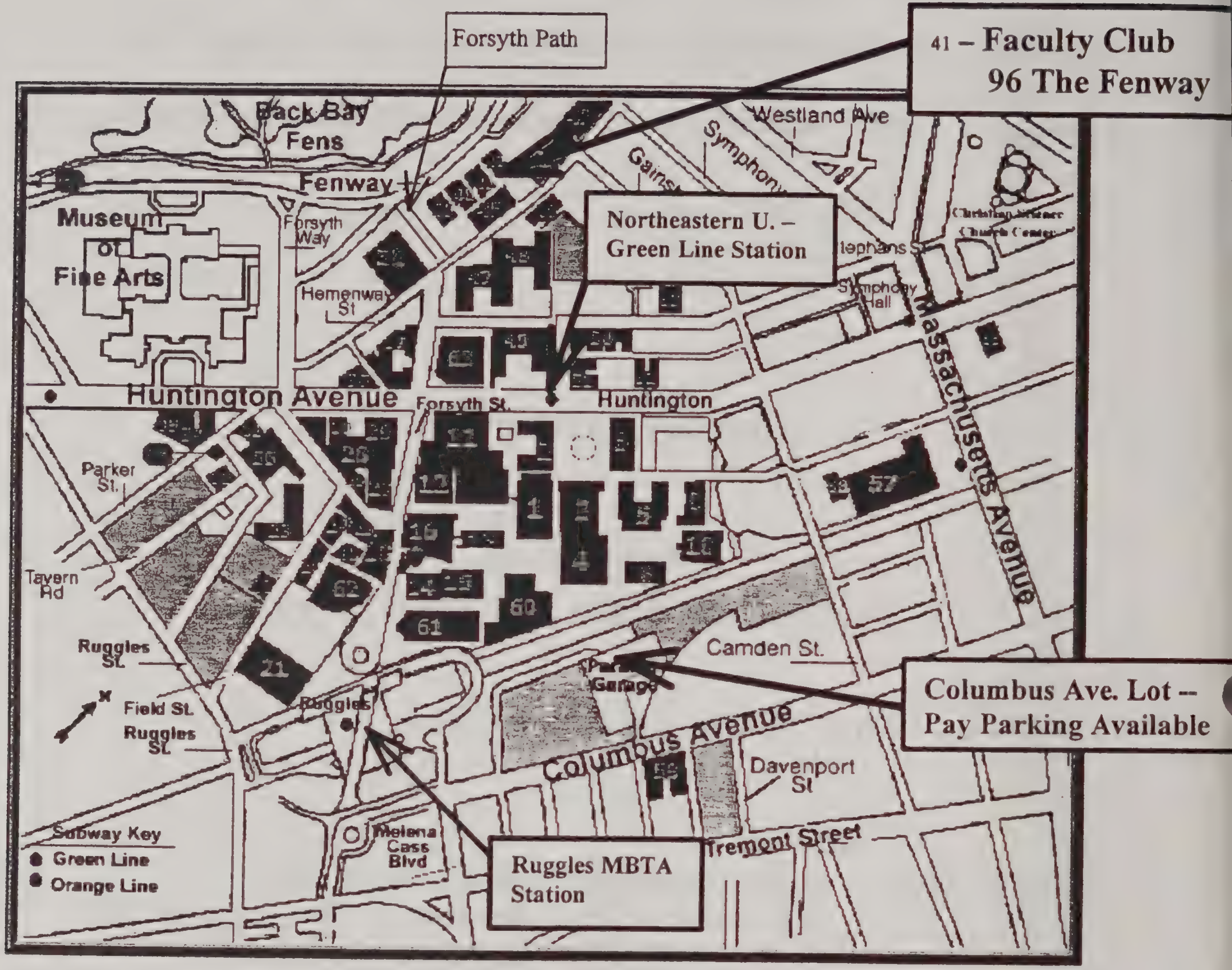
If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to

Northeastern University Faculty Club

Kerr Hall, 96 The Fenway

NORTHEASTERN UNIVERSITY CAMPUS



From The Fenway (walking):
The Faculty Club is at 96 The Fenway, between Westland Avenue and the Museum of Fine Arts.

From Green Line (E Train):
Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Right on Forsyth St. and walk to end. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Orange Line:
Exit at Ruggles Station. Use the Forsyth Street exit. Walk 2 blocks, cross Huntington Avenue (traffic light) and continue one more block. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Parking Garage:
Cross the tracks using the concourse through Ruggles MBTA station. Next, follow direction (above) from Ruggles Station to the Faculty Club at 96 The Fenway.

MEMORANDUM

DATE: October 10, 2001

TO: Emerald Necklace Citizens Advisory Committee

FROM: John Burckardt, Project Manager

RE: Meeting Announcement

Monday, October 29, 2001

Kerr Hall,
96 The Fenway
Northeastern University Faculty Center

~ ~ ~ ~ ~ ~ See Map on Back! ~ ~ ~ ~ ~ ~

Agenda Topics:
- --Update on Park Maintenance Plan
  (Tim Marshall, ETM Associates, LLC)
- --Update on Review of Park Management Models
  (Clarissa Rowe, Brown and Rowe Associates, Inc.)

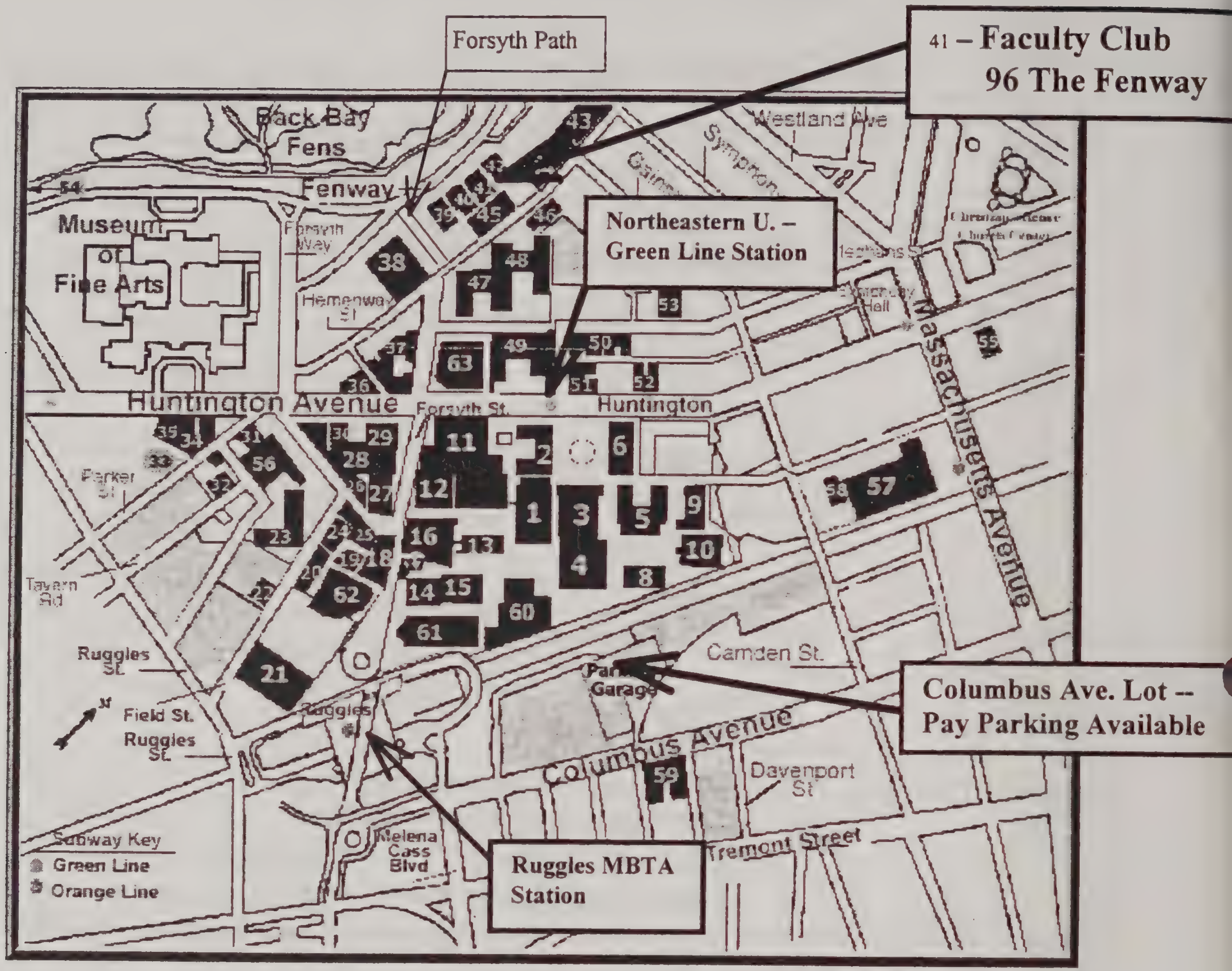
This meeting will be the follow-up to the July 18, 2001 meeting and August 4, 2001 site walk with Tim Marshall. Tim will present a draft of his analysis of the existing park maintenance effort and his proposed level of effort needed to maintain the Muddy River parks upon completion of the Muddy River Restoration Project. Clarissa Rowe will present findings regarding possible management models for the Muddy River parks.

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Directions to
Northeastern University Faculty Club
Kerr Hall, 96 The Fenway

NORTHEASTERN UNIVERSITY CAMPUS



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Emerald Necklace Citizen's Advisory Committee

Northeastern University Faculty Center

Kerr Hall

Monday, October 29, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, Assistant Facilitator
John Burckardt, ***P. E****, Project Manager*

- Welcome – Margaret Dyson, who is replacing Fran Beatty
- Welcome – Arthur Pugsley, who is replacing Laura Rome
- Welcome – Kelly Brilliant, who is replacing Paul Mentag
- Resignation from CAC – Richard Heath and Jane Pfister

II. Discussion of Consultants work on Maintenance and Management 6:15 – 7:15

- Tim Marshall – Park Maintenance Plan
- Clarissa Rowe – Review of Park Management Models
- Follow-up Meeting ?

III. Discussion of Review Process for DEIR 7:15 – 8:15

IV. Process Issues/Organization **8:15 – 8:45**

- MODR's Role
- Participant Evaluations of MODR Facilitation
- CAC Correspondence
- Brookline Project Impact (Isabella)

File CAC Notes4

Under the heading of Best Management Practices we recommend that the Town of Brookline make a commitment to a different future for the "industrial island" near Route 9. The Engineers referred to the problem of runoff and contamination from the industrial uses in this strip in the Best Management Practices presentation. The industrial zoning was the work of the Brookline Redevelopment Authority in the 70's. On three occasions Brookline Town Meeting has voted to downzone the area to general business but not by the 2/3 vote necessary for a zoning change.

This problem at the Route 9 end of the Riverway is analogous to Boston's problem with the Sears Roebuck parking lot at the other end of the Riverway. Brookline should follow Boston's example in seeking a new solution for the problem. Although the industrial island was not part of the park we know that Olmsted wanted to include it. As it stands it is an environmental and visual blight on the Emerald Necklace.

October 23, 2001

TO: Joseph Geller, Brookline Board of Selectmen

FROM: Isabella Callanan, Friends of the Muddy River

Attached is one of my comments on the draft EIR for the Muddy River restoration. This issue is not new to the community. It has been brought up in the form of a downzoning warrant article three times at town meeting. I brought it up in one of the preliminary Planning meetiings several months ago but it was not reiterated in the Planning Departmemt summaries.

I am writing to you as Chair of the Board of Selectmen, President of the Conservacy, and Chair of the Comprehensive Plan Committee. We, the Friends of the Muddy River would like it, or this concept introduced as part of the Comprehensive Plan.

I would much appreciate your comments and advice.

Isabella Callanan

Town of Brookline
Massachusetts

Department of Planning and Community Development

Town Hall, 2nd Floor
333 Washington Street
Brookline, MA 02445-6899
(617) 730-2130 Fax (617) 730-2442
Bob_Duffy@town.brookline.ma.us

Robert J. Duffy, AICP
Director

October 25, 2001

Isabella Callanan
22 Bowker Street
Brookline, MA 02445

RE: Comprehensive Plan's Recommendations for "Industrial Island" at Route 9 and Muddy River

Dear Isabella:

Thank you for your letter dated October 23, 2001 to Selectman Joseph Geller regarding your comments on the EIR for the Muddy River restoration and the Town's Comprehensive Plan that pertain to the "industrial island" located at the intersection of Route 9, Brookline Avenue and the Riverway.

Your comments will appear as part of the Comprehensive Plan's summary report on the recent Brookline Village neighborhood forum which is now being completed by the Department of Planning and Community Development. I will forward a copy for your review and consideration.

During the initial Issues and Opportunities phase of the Comprehensive Plan, the important interrelationships between the Emerald Necklace, Muddy River and Route 9 corridor have been discussed, particularly the importance of storm water management and short and long term land use and zoning strategies. As we move into the next phase of the comprehensive planning process, alternative strategies will be considered to address the visual and environmental quality of this critical segment of the Emerald Necklace which also serves as a gateway to Brookline.

Once again, thank you for your comments. I look forward to continuing to work with you and the Friends of the Muddy River as we prepare a Comprehensive Plan for our community's future.

Sincerely,

Robert J. Duffy, AICP, Director of Planning
And Community Development

CC: Selectman Joseph Geller
Friends of the Muddy River
Emerald Necklace Conservancy
Comprehensive Plan Committee

Emerald Necklace Citizens Advisory Committee
Discussion with Laura Rome, MEPA Office
October 3, 2001

PROJECT AREA

The site boundaries for the entire Emerald Necklace run from curb-to-curb from Charlesgate to Franklin Park plus the MDC parkways. This is the project for which the Secretary established the CAC.

The portion of the project currently undergoing MEPA review is Phase 1 of that larger project and runs Charlesgate to Jamaica Pond and includes

(1) the river itself,

(2) any place along the river, between the river and the parkways, that is disturbed by the project, and

(3) any aspect of the parkways that has an impact on the river.

ROLE AND LIFESPAN OF CAC

The CAC's role is to advise the Secretary on the adequacy of the EIR. The CAC will review the analysis of environmental impacts, alternatives, and mitigation measures as they are proposed in the EIR, and as was required by the Secretary in his scope for the EIR.

Up to now, the CAC has been engaged primarily in helping the proponent to develop a better – more thorough and responsive -- EIR. But, with the submittal to the Secretary of the official DEIR, the CAC will shift gears and focus on preparing advice for the Secretary. That advice should be presented in a comment letter to the Secretary, which would be filed with the MEPA Office during the comment period on the DEIR.

The Secretary expects that, at a minimum, the CAC will continue in its role until after the proponent files the final review document called for in the special review procedure. In this case, that final review document would be the last annual update for the project. After the review of that annual update, the CAC may consult with the Secretary and the proponent to determine whether it will have any role in future actions on the project.

MAINTENANCE

In the scope for the EIR, the Secretary specifically called out the issue of maintenance as a key element of the project's MEPA review. As he said in his Certificate, the state and others have invested a substantial sum of money in the project area and have made commitments to continue to do so in the future. To ensure that that money will have been well spent, it is essential that a plan for maintaining the project area is discussed at the earliest possible stage in the project's development.

Once the elements of the maintenance plan have been determined, they will be codified in both the project's Section 61 Findings (which MEPA requires state agencies to file when they act on a project) and the conditions on the state permits. The state permitting agencies (in this case, the Department of Environmental Protection) then would be responsible for ensuring that the permitting conditions are met. The Attorney General's office would be responsible for ensuring compliance with the Section 61 Findings.

Reporting on the status of the implementation of mitigation measures should occur in the annual updates, which are required under the Special Review Procedure. The DEIR must include a proposed scope for the first annual update. I encourage the CAC to review that proposal carefully to ensure that the updates will include information that the CAC will need to monitor the proponent's compliance.

SUPPORT FOR THE CAC

As the CAC has been learning about the project and then reviewing the pre-filing draft of the EIR, it has been working closely with the proponent and its consultants. As its moves more completely into its role as advisor to the Secretary, it has expressed a preference for adding some distance between itself and the proponent team. Toward that end, the Massachusetts Office of Dispute Resolution, which has been providing facilitation and other support throughout the review process, may increase its level of involvement, especially in the substantive review of the project. However, the proponent and its consultants would continue to provide logistical and administrative support as necessary (and as required under the MEPA regulations).

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – October 29, 2001 CAC Meeting

Northeastern University, Faculty Center
96 The Fenway, Kerr Hall, 2nd Floor

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator

Amanda Griesbach, MA Office of Dispute Resolution, Assistant Facilitator

John Burckardt, P.E., Project Manager, Boston Parks and Recreation Department

- Welcome – Margaret Dyson, who is replacing Fran Beatty
- Welcome – Arthur Pugsley, who is replacing Laura Rome
- Welcome – Kelly Brilliant, who is replacing Paul Mentag
- Resignation from CAC – Richard Heath and Jane Pfister

II Discussion of Consultants work on Maintenance and Management

- Tim Marshall (ETM Associates, LLC) – Park Maintenance Plan
  - Tim Marshall provided CAC members with an overview of his report.
  - Currently, there are 10.6 FTE[1] staff for park maintenance. There is a need for 12-17 more FTEs for the maintenance of the Muddy River Parks of the Emerald Necklace.
  - Arboretum – provides one possible standard for maintenance for the park; however, the Arboretum is unique and in many ways different from the rest of the Necklace.
  - Arboretum works because they have skilled, dedicated park-based staff who works exclusively in that location.
- Comments from CAC members on Tim's draft report
  - Page 12, next to last bullet, "water body management" is listed, however on page 18, water isn't mentioned in recommendations for maintenance.

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[1] FTE = full time equivalent. One person working full time is 1 FTE. A crew of 4 working 20% of their time is 0.8 FTE (4 workers x 0.20 = 0.8).

- Leaf litter is not being picked up and is contributing to siltation. The park does not currently have a maintenance program beyond the bare minimum. It was also noted that the Fenway Alliance is involved in contracting for mowing in the Back Bay Fens.
- What would be done with more staff, what would be done with the condition of the landscape by the extra staff? These questions need to be answered in the report. There should also be maintenance objectives that consider aesthetic issues and landscape types.
- Maintenance principles also need to be established, such as when a specimen tree dies it is replaced with a specimen tree, etc.

  > *Tim Marshall said he plans to include pictures in the document to help clarify the different types of landscapes and also images that show ideal landscape and maintenance conditions.*

- Drainage structures and built features are unique to Muddy River as compared to the Arboretum, which need to be considered in the maintenance plan.
- Page 18 – recommendations for preservation and conservation seem to be focused on built features. Horticultural perspective should be considered.
- A timeframe for adding staff (with their duties) is needed for planning and budgetary purposes.
- With the recommendations, the CAC need to know what step one involves and a strategic implementation plan. Also, what is a "step one" for advocates?
- Need to prioritize the recommendations, i.e. equipment needs and at what point new equipment should be purchased, etc.
- Back Bay Yard – There was discussion about whether the Yard could provide storage for maintenance equipment.
- Concerned about footbridges that are not being maintained despite being within the park's jurisdiction. Also one CAC member advocated for the preservation of the Clemente Field fieldhouse, which, according another CAC member, has deteriorated beyond salvation.
- One CAC member was concerned about the potential of integrating volunteers with unionized park staff.

  > *Tim responded that it may be difficult and it takes time and dialogue to come to a mutual understanding of a role for volunteers.*

  Another CAC member noted that unions can be excellent partners in projects, depending on how they are approached.
- On page 16, include as part of 2-year contract a training program for park staff from the contractors.

  > *Tim Marshall agreed that the 2-year contract should benefit the park staff. He also noted various concerns about the structure of the maintenance contract work. Is there a way for the 2-year contractor to build the long-term capacity of the park maintenance program.*

- A CAC member suggested a more integrated approach for using the 2-year contract, perhaps a gradual phase-in for park staff to work with contractors and at a minimum, there is a need for supervision of contractors.
- On page 19 – the McKinley Vocational School has a landscape program. The park would be a good opportunity to provide kids with an outdoor classroom.
- Water quality - could build into the maintenance contract an agreement with the Charles River Watershed Association for the monitoring of water quality.

  > *Bruce Conklin (CDM) responded that water quality monitoring will be included in a different part of the Maintenance and Management plan.*

  - A CAC member questions what type of watering equipment is available for park maintenance. This needs to be considered in capital expenditures section of Maintenance and Management.

- Clarissa Rowe (Brown & Rowe Assoc., Inc.) – Review of Park Management Models

  - Clarissa has distributed a matrix (Attachment comparing four park management models with 21 Lessons Learned from her interviews. Clarissa also showed CAC members two books she also used in her research: *Inside City Parks*, by Peter Harnik and *Public Parks, Private Partners: How Partnerships are Revitalizing Urban Parks*, edited by Andrew Schwartz
  - Central Park, Prospect Park and Louisville Park are all Olmsted Parks, while Pittsburgh Park has multiple jurisdictions.
  - Matrix includes basic information about the parks, Park Management, Park Conservancy's/Alliances and Involvement of Park Advocates.
  - *Central Park* is managed by a conservancy that is paid by the City to maintain the park. It took 30 years to establish a successful maintenance program. The conservancy put money immediately into staff and maintenance program after restorations, so that the park has not required further large-scale restoration.
  - The volunteer program gives a range of volunteering options, which increases volunteerism, for example, from once a month to daily participation. It took a very long time to build up a successful volunteer program.
  - *Prospect Park*: This park is considerably smaller and has significant financial backing. The park has formed a partnership with Reebok and has other commercial partnerships.
  - Need to work closely with park advocates in the surrounding neighborhoods right from the beginning. A community committee was established later, which includes 40 groups, which met monthly for two years. Now the community committee works closely with Prospect Park.
  - Lesson from Prospect Park: "Keep evolving and do no harm."
  - *Louisville Olmstead Park:* Conservancy should be given public role from the start.
  - *Clarissa Rowe highlighted main points from 21 Lessons Learned:*
  - Trust takes a long time to build, need to have patience.
  - In Pittsburgh, they have a monthly public meeting in the Commissioner's office. Winter is a good time to have this kind of meeting.
  - Conservancy should have strong role with public entities e.g. the three different park owners.
  - Conservancy staff take park foreman out to lunch to ask for their ideas
  - Prospect Park takes an average of 80-100 hours per acre per year to maintain.
  - First year should be dedicated to establishing an image of safety and accessibility for the park, as well fundraising.

- Comments from CAC members on Tim's draft report

  - A CAC member asked for clarification of Clarissa's scope of work. This involved completing a study of park management models and lesson's learned, not a recommendation of a model for the Emerald Necklace.

    The information from Clarissa will be incorporated into CDM's DEIR. Tim and Clarissa's report will be integrated into the Maintenance and Management Chapter of the DEIR.

- CAC members noted that the Emerald Necklace is unique as a linear park. How do the these recommendations translate to the Necklace?
- A CAC member indicated she would be interested in Clarissa's comments regarding the models for park management for a park with multiple jurisdictions.

  John Burckardt commented that as part of the CAC's correspondence with MEPA, 3-4 management model alternatives would be considered for the DEIR, with the FEIR outlining a more definitive model. John Burckardt also emphasized that any model must be given flexibility in implementation and that all the models studied indicated that today's structure evolved slowly over time.

- Follow-up Meeting
  - CAC agrees that their comments on Tim's revised report due in November can be communicated to him via e-mail and telephone. No further trips to Boston required from Tim.
  - November 14th will be the follow-up meeting for Tim's report. The next draft should be delivered to the CAC in advance of the November 14th CAC meeting.

III Discussion of Review Process for DEIR

- CAC agrees that they will postpone discussion of the review process for the DEIR until the next meeting.
- A few of the CAC members expressed a desire not to receive all the appendices. MEPA requires that the CAC receive the complete DEIR 30 days before the filing. However, Bruce Conklin noted that CAC members can request copies without appendices or fewer copies. At the November 14th meeting, the CAC will determine how they want to receive the DEIR. According to the regulations, all members of the CAC need to receive the DEIR or indicate how they want to receive the DEIR.
- Jane Wells offered the document "CAC Review of Draft Environmental Impact Report" as a guideline for the CAC to consider. Please see Attachment 3.

IV Process Issues/Organization/Member Correspondence

- MODR's Role - will be discussed at the next meeting

- Participant Evaluations of MODR Facilitation
  - Jane requested evaluation of facilitation services provided by MODR – please send them in if you haven't previously responded. Additional copies are available from Jane Wells or MODR.

- CAC Correspondence
  - Richard Heath's resignation letter – A few CAC members commented that Richard Health had made a valuable contribution to CAC.
  - CAC expressed concern about Richard Heath's comment regarding the Park Commissioner's statements. Margaret Dyson reported that she had spoken with Richard Heath and with the consultants. The consultants said that the Commissioner had not spoken with them about Mr. Hearth. However, consultants and staff had emphasized collecting new information for the CAC, rather than from the CAC, while revising the scope to meet the tight timeframe and budget.
  - George H. recommended that the CAC write a letter inviting Richard Heath back to CAC. The CAC members present agreed to further consider this proposal at

the next CAC meeting. The CAC members present also invited members, *as individuals,* to contact Richard directly.

- Brookline Project Impact (Isabella Callanan, CAC member)
    - A memo with attached information was handed out at the meeting. Isabella requested that the CAC consider endorsing the proposal that the Town of Brookline consider a different future for the "Industrial Island" near Route 9.
    - A CAC member noted that the Industrial Island was never part of the Park and therefore should be considered as adjacent land use. The CAC should consider the impact of adjacent land use on the Emerald Necklace and to what degree the CAC should become involved.
    - The CAC will consider this issue at the meeting on November 14, 2001.

- **Announcements**

John Burckardt made two announcements at the end of the meeting:

1) The Boston Conservation Commission Hearing for the sewer separation at Back Bay Yard will be Wed., Nov. 7th at City Hall. (6:45 pm)

2) The Boston Water & Sewer Commission will issue an Environmental Notification Form (ENF) on the rehabilitation of the exterior of the Gatehouses in the Fens. This is expected early in December 2001.

Next Meeting

The next meeting of the CAC was scheduled for **Wednesday, November 14, 2001** and will again be at the Northeastern University **Faculty Center, 96 The Fenway** at 6 pm. Topics will include a follow-up on the draft maintenance report and preparation for the receipt and review of the official filing Draft Environmental Impact Report.

Enclosures: Attachment 1 – Sign-In Sheet
Attachment 2 – Comparison to Other Park Models (3-page matrix) and Lessons Learned (2 pages)
Attachment 3 – CAC Review of Draft Environmental Impact Report (21 pages)

Attachment 1

Emerald Necklace Citizens Advisory Committee

Meeting

October 29, 2001

Sign-In Sheet

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Kelly	Brilliant	Fenway Alliance	Kelly Brilliant gso
Edward	Burke	Restore Olmsted's Waterway Coalition	Ed Burke
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callanan
Suzanne	Comtois	Fenway Community Development Corp	Suzanne Comtois
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	Ed Cutler
Frances Allou	Gershwin	~~Mahoney Hawkes LLP~~	Frances Allon Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	
Gary R.	Hilderbrand	Reed Hilderbrand Associates, Inc.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Attachment

Emerald Necklace Citizens Advisory Committee

Meeting

October 29, 2001

Sign-In Sh

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Arelne	Mattison	Emerald Necklace Conservancy	Arline Mattis
Hugh	Mattison	Friends of Leverett Pond	
Lauren	Meier		Lauren
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	Marian Sabal
Joyce	Starner	Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	Fredericka Veikley
Eileen	Woodford	Nat'l Parks & Conservation Asn	

Emerald Necklace Citizens Advisory Committee

Meeting **Sign-In Sheet**

October 29, 2001

\\parksmail\bospark\Muddy\CAC Meetings\CAC-30 Oct 29, 2001\[CAC Sign-in Oct-29-2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Clarissa Rowe	Brown & Rowe	617-542-8552	crowe@brownrowe.com
Jane Towells	MODR	617-727-2224	JANETOWELLS@Earthlink.net
Amanda Griesbach	MODR	″	amanda.griesbach@state.ma.us
John Burckardt	Project Mgr. for Boston & Brookline c/o Boston Parks	617-635-4505	jburckardt@ci.boston.ma.us
Roy Blomquist	General Superintendent Boston Parks and Rec.	617-635-7381	RBlomquist@CI.BOSTON.MA.US
Claire Fluey	Fenway Garden Soc. 95 Park Dr. Boston, Ma 02215	617 266-1169	
JAY CORTELL	CORTELL ASSOC.	(781) 8903737x111	cortell@cortell.com
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
TOM BRADY	TOWN OF BROOKLINE	617-730-2088	tom_brady@town.brookline.ma.us
Angie Parker	Boston Parks	617-635-6518	aparker@i.boston.us
MARGARET DYSON	BOSTON PARKS	617 635-4505	mdyson@ci.boston.ma.us
MARION PRESSLEY	PRESSLEY ASSOC.	617-491-5300	
Erin Chute	Dir. of Parks Town of Brookline	617-730-2088	
Simone AUSTER	Emerald Necklace Conservancy	617-232-5374 (new)	SAUSTER529@aol.com
SAMANTHA Overton	MDC	617-727-3227 x503	

Attachment 2

Muddy River Reconstruction Project

DRAFT FOR DISCUSSION – 10/29/01

Emerald Necklace Parks - Comparison to other park models

	Central Park	Prospect Park	Louisville's Olmsted Parks	Pittsburgh Parks
A. Parks				
1. Acres	810 Acres	526 Acres	15 miles of parkway, 1200 acres of parkland	200 Acres
2. Number of Owners	1	1	2 – Metro Parks and Jefferson County	2 – Pittsburgh Parks Department and Pittsburgh DPW
3. Designed by Olmsted	YES	YES	YES	NO
4. Annual Operating Budget	22 million (2/3 provided by Conservancy)	*	No dedicated funding stream for Olmsted Parks	*
5. Annual Capital Improvements budget	*	1.2 percent of operating budget	*	2.2 percent of operating budget for total system
6A. Park Staff #	175	*	*	*
6B. Conservancy Staff #	216	42	6; park staff works as adjacent staff	5
7. Is there a Master Plan? Date?	1987, Restoration Master Plan	Olmsted original plan	1994, Andropogon Associates, detailing 50 million $ in capital improvements	Yes, team of 5 firms, late 2000
8. Conservancy Founded	1980	1987	1989	1996
B. Park Management				
1. Meeting of Commissioners/ Owners per Year	*	*	*	Monthly
2. Relationship of Owner to Owner if multi-jurisdictional	NA	NA	*	Park ombudsman
3. Relationship of field staff to field staff (do you have joint work days?)	*	NA	*	Conservancy staff talk to each parks foreman
4. Park tasks outsourced	Maintenance management	Tree pruning care; Invasive plant removal	*	*
5. Does each park have own supervisor?	*	Yes	*	At least a foreman
6. Is park equipment bought by outside sources?	*	Yes	*	*
7. Are there performance criteria for park work?	*	*	*	*
8. What is the maintenance budget per acre of park land?	*	80-100 hours per acre	*	*

*Information to come.

C. Park Conservancy / Alliance	Central Park	Prospect Park Alliance	Louisville Olmsted Parks Conservancy	Schenley Park Conservancy became Pittsburgh Park Conservancy
1. How much money did it raise in the first five years? In the first ten years? Total?	$250 million total.	*	$1 Million seed money from city, $8 Million in donations to leverage $4.5 million from city.	First year: $300,000 in cash donations, $400,000 in-kind services.
2. What were its first tasks?	Restoration of the Dairy, Bethesda Fountain, Belvedere Castle and Annual Lunch.**	Tours of resource. Put a name and positive image in public realm. Put together a strong board of directors w/ credibility in funding field.	Raises private funding for joint capital improvement projects; Participates in planning and design; Administers Park Champions Volunteers.	Fundraising; Create membership; Coordinate other civic organizations Advocacy.
3. What are its standing committees?	*	Operations, community, fundraising.	*	*
4. Describe the makeup of the Conservancy board. How is it involved?	Board chair, CEO	Private and political advocates for park budget.	*	*
5. Is the head of the Conservancy a technical or political person or both?	Elizabeth Barlow Rogers, first head of Conservancy, was also Central Park Administrator.	Both; initially political, Tupper Thomas has both head titles.	Susan Rademacker, assistant parks director for planning, head of Conservancy; now her deputy is public employee.	Political; separate from Parks or DPW; Meg Cheever is a former editor and cultural institution administrator.
6. How does the Alliance staff work with the public park staff?	*	Interchangeable. Alliance funds positions for public sector.	*	Separate functions.
7. How is the $ raised accounted for?	Annual lunch, corporate contributions.	Yearly audits reviewed by Alliance Board and NY Parks Dept.	*	*
8. How is the credit given to donors in a public park?	*	Shields on new trucks/ equipment, written material. Donations immediately deeded to City of New York.	*	*

*Information to come.

**"I had to make the people of New York City see the park in the same light as the Museum of Natural History or the Bronx Zoo or the Botanical Gardens" said Betsy Barlow.

D. Involvement of Park Advocates		New Community Committee as of 1996 (Prospect Park)	Louisville Friends of Olmsted Parks 1986	
1. Is there a volunteer coordinator?	Yes, and a web page - volunteer@centralparknyc.org	Yes, took 2 years of meetings.	Yes	Yes, one in DPW, one in Conservancy
2. Where is the person housed?	*	In park	*	Both places
3. What contributions do the advocates make towards the park besides financial contributions?	*	Look at yearly work plan, help staff with operational directions	Community committees to look at park needs, do clerical and informational work	Advocate Volunteers Marketers Park stewards
4. How do the advocates interact with the public park staff? How are they involved with the Alliance or Conservancy?	*	Work with park and alliance staff on operational decisions. Work on 5 and 10 year comprehensive park plan. Staff works to frame decisions.	Park staff directs conservancy volunteers. Friends are aggressive advocates	Through monthly meetings and park ombudsman. Conservancy attends monthly meeting
5. Do the advocates have a forum to discuss future park plans?	*	Yes, but not a legal one.	Input in Master Planning Process, serve as advisors, stewardship councils	Once a month
6. What maintenance items do the park advocates undertake?	*	Planting, erosion control, water sampling, vegetation monitoring and control	Remedial maintenance, trails, Park Champions	The ones suggested by the park foreman
7. Other Helpful Quotes	"In 1998 the city of New York awarded the Central Park Conservancy a management contract that ensures the continuing maintenance, public programming, and capital restoration of Central Park."	"Everything takes a long time." "Keep evolving and do no harm."	"Basically the Friends of Olmsted Parks works from the outside advocating for the parks, while the conservancy works from the inside."	*

*Information to come.

This material collected from two sources: Inside City Parks by Peter Harnik, published by the Urban Land Institute and the Trust for Public Land, Washington, DC 2000; and Public Parks, Private Partners: How Partnerships are Revitalizing Urban Parks, Andrew Schwartz, Editor, published by Project for Public Spaces, New York City, NY, 2001; and from conversations with Tupper Thomas, Susan Rademacker, Tim Marshall, Pam Tice, Gerry Weinstein, Hannah Ehrlich, Simone Auster, Chris Noonan, Sarah Peskin, Richard Spaulding, Jackie Selby, Justine Liff, Erin Chute, Tom Brady, Samantha Overton Bussell, Joe Geller, Arlene Mattison, Hugh Mattison, Richard Heath, Charles Birnbaum, Arleyn Levee, Betsy Shure Gross, and Roy Blomquist.

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Draft for Discussion with CAC
October 29, 2001

Lessons Learned from Park Management Models

1. Be really patient about implementing change. Tupper Thomas of Prospect Park said "Everything takes a long time."
2. Do a Master Plan to guide capital improvements.
3. Have public meetings of all interested parties on a regular basis.
4. Any management structure that is set up should be able to withstand a Mayor who "hates parks" and a change in the person who runs the park's department and the Conservancy.
5. The relationship between the Municipal Owner and the Conservancy is the best when the head of the park system is also the head of the Conservancy.
6. Have regular meetings of all park administrators and the conservancy head. These meetings should probably occur between October and the beginning of March when park administrators are less busy. The meetings could focus on the new plans for the coming season in the early spring and a review of the season's accomplishments in the fall.
7. Work towards having a park superintendent or foreman for each park. Ask the foreman's ideas for tasks that volunteers could do.
8. Develop performance criteria for the entire park system.
9. Have regularly scheduled field clean ups for the parks field staff with Conservancy staff.
10. Keep the municipal unions informed about the work of the Conservancy and the volunteers.
11. Discuss what park tasks can be outsourced to lighten the park staff's maintenance tasks. Involve the labor unions in this discussion.
12. Determine the maintenance budget per acre of park land and publicize it.
13. There should be a volunteer coordinator in the public entity and the Conservancy. They should talk and plan together.

14. The Conservancy Board Chair should be a CEO who likes to ask other CEOs for money. The first board of directors should have people with connections to money and political power.

15. The first years of a new Conservancy should be spent on the park's image, its public accessibility and its safety. The Conservancy should remain as the primary "marketing" face of the resource.

16. Develop guidelines for identifying private donors in the park. Develop guidelines to give the Conservancy accountability for the private funds that are used in the parks.

17. Provide audited annual reports for the public park and conservancy finances that are available to the public.

18. When a capital improvement is completed, plan for its program to draw new users to it and staff it for increased public use. Make the first projects highly visible and appealing so that they will be universally used.

19. Welcome the park advocates into the planning process. They are most helpful serving as the "eyes and ears" of the parks. They can monitor vandalism and invasive vegetation and report to the parks department. They can do non-union tasks and serve as tour guides for the general public. They can serve as vocal advocates for increased funding for the parks if they believe in the mission of the Parks Departments and the Conservancy.

20. Set up a Community Committee that consists of any group that uses or cares about the park. The Community Committee needs to reflect the diversity of the abutters of the parks. Involve them in the 5 or 10 year operational plan. Commit staff time to focus the decisions that are made by the Community Committee. Do blend the diverse park advocates into the Conservancy even if it takes a couple of years of "real relaxed" meetings.

21. As each of these models evolved, there was tension between the evolving entities. This tension leads to solutions that result in better parks.

CAC Review of Draft Environmental Impact Report

General Questions:

- Does the DEIR meet the prescriptions set forth in the Secretary's Certificate?
- Does the DEIR describe the project in a manner consistent with how the project was described at the CAC presentations?
- Does the DEIR incorporate the comments made by the CAC at the CAC meetings?
- Is there a more cost-effective way of accomplishing an element of the project, while still meeting the stated project objectives?

Specific Questions Based on the Certificate of the Secretary of Environmental Affairs on the ENF (dated 4/29/99).

Instructions:

1. For each topic in column (1), put a Yes or No in columns 2 and 3.
2. In the event of a response of No in column 3, CAC members should articulate reasons why the topic is not adequately addressed and include in the meeting notes. Put a Yes in column (4).
3. In some cases where there is a Yes in column (3), the CAC may wish to include comments. If so, put a check in column (4) and CAC member(s) should articulate the comments, which will be included in the meeting notes.

ATTACHMENT 3

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Alternatives				
The EIR should expand on the alternatives analysis included in the ENF				
The EIR should analyze the no-action alternative to establish baseline conditions				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Project Permitting				
The EIR should include a brief discussion of each state permit or agency action required for the proposed project.				
The EIR should discuss how the project will meet the requirements and performance standards of each state permit.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Flood Control				
The EIR should identify specifically which proposed actions are intended to prevent or minimize flooding.				
The EIR should describe the potential impacts of flood control activities and impacts that have been considered that would avoid or minimize damage from flood control activities.				
The EIR should quantify additional flood water storage capacity to be gained by each area of proposed dredging and identify the locations of additional storage capacity areas.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Flood Control (continued)				
Where the project proposes clearing or expanding culverts, the EIR should specify the activities to be undertaken and the benefits projected to be gained.				
The EIR should include the sequence in which flood control projects will be implemented and should describe the criteria used to assign priority to flood control projects.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Stormwater/Water Quality Improvements				
The EIR should describe in detail the specific measures that will be undertaken to improve water quality, indicate the sequence in which they will be implemented and relate that sequence to the schedule for dredging.				
The EIR should describe potential impacts that may result from implementation of any stormwater or water quality improvements.				
The EIR should include a comprehensive maintenance management plan to ensure continuing effectiveness of any stormwater or water quality improvement measures and prevent new siltation, and identify funding sources for ongoing long-term implementation of the maintenance plan.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Wetlands Impacts/Variance Requirements				
The EIR should identify all wetland resource areas, including riverfront area and buffer zones, and delineate them on a reasonably scaled plan.				
The EIR should identify the significance of the resources, including value to flood control, storm damage prevention, pollution prevention, and fisheries and wildlife habitat.				
The EIR should quantify in appropriate units the project's estimated impact on each resource area.				
The EIR should provide information requested in DEP's comment letter regarding the project purpose(s) to be served by each instance of wetland alteration.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Dredging				
The EIR should describe the potential impacts of the proposed dredging and indicate the location of each area proposed to be dredged.				
The EIR should describe the purpose(s) of each area of dredging and alternatives to dredging.				
The EIR should compare the benefits of bank-to-bank, channel and spot dredging in terms of the goals of the proposed project.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Dredging (continued)				
The EIR should analyze a range of dredging techniques, describe the circumstances under which each would be the preferred alternative and indicate the criteria used to select dredging techniques for the project's various dredging areas.				
The EIR should clarify the purpose of any proposed overdredging and describe how the project will avoid damage to the clay liner during overdredging.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Dredged Material Management and Disposal				
The EIR should describe in detail how the proponent will manage dredged material.				
The EIR should analyze various locations for storage and dewatering in terms of technical suitability and the impacts on traffic, residents and historic impacts.				
The EIR should describe the proponent's plans for identifying and managing contaminated sediments, including proposed testing and on-site treatment and techniques for segregating contaminated sediments.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Dredged Material Management and Disposal				
The EIR should identify landfills that may be able and willing to accept dredged materials from the project.				
The EIR should include appropriate out-of-state landfills.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Phragmites Control				
The EIR should describe the methodology and results of the demonstration project and indicate how those results will inform the alternatives analysis for Phragmites control in this project.				
The EIR should describe the purpose and potential impacts of any proposed Phragmites control activities.				
The EIR should describe alternatives considered, explain why any alternatives are no longer under consideration and provide information related to the projected effectiveness of the preferred alternative.				
The EIR should also describe the maintenance plan to be implemented to ensure that the Phragmites does not return, including identifying funding sources for implementing the maintenance plan.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Habitat Improvement and Rare Species				
The EIR should identify which activities are intended to improve wildlife habitat and document what improvements will result from these activities, what impacts are likely to result from those activities and what alternatives have been considered that may avoid or minimize impacts from these activities.				
The EIR should describe steps that the project will take to avoid impacts to rare species.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Historic Resources and Landscape Restoration				
The EIR should describe the landscape restoration project in greater detail, including the proposed sequence of restoration projects and plans that demonstrate at least a conceptual level development.				
The EIR should identify any impacts on historic resources that may result from the implementation of this project, as well as any alternatives that have been considered that may avoid or minimize damage to historic resources.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Circulation Improvements				
The EIR should describe the proposed sequence of circulation improvement projects and plans that demonstrate at least a conceptual level development and include proposed stormwater management improvements in roadways and pathways.				
The EIR should describe potential impacts on the environment of the proposed circulation improvements, alternatives that have been considered and the sequence in which the improvements are proposed to be undertaken.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Charlesgate				
The EIR should detail the proposed activities in the Charlesgate area, their likely impacts on the environment, alternatives that have been considered, and include an analysis of the alternatives, a schedule and proposed mitigation measures.				
The EIR should include a construction mitigation plan, particularly regarding potential traffic impacts.				
The EIR should include site plans at an appropriate scale showing the boundaries of the proposed project area, as well as wetland resource areas and their buffer zones.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Charlesgate (continued)				
The EIR should include all information that the proponent will be required to provide to the Federal Emergency Management Agency.				
The EIR should contain a proposed Section 61 Finding relative to this phase.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Construction Impacts				
The EIR should describe impacts likely to result from project construction and steps that will be taken to avoid or minimize construction impacts.				
The EIR should describe the measures that the proponent will take to protect historically and environmentally significant landscape features and vegetation.				
The EIR should describe potential impacts on traffic and recreational use of the parks, especially during dredging, and the steps that will be taken to avoid or minimize these impacts wherever feasible.				
The EIR should describe steps that the proponent will take to minimize the project's adverse impacts on air quality, including ensuring the use of retrofitted construction equipment.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Maintenance and Monitoring				
The EIR should describe in detail the proponent's maintenance management plan for maintaining the restored condition of the Muddy River and the Emerald Necklace parks.				
The EIR should describe ongoing measures to prevent the recurrence of invasive vegetation that has been removed.				
The EIR should include commitments to maintain the restored historic landscape and structures.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Maintenance and Monitoring				
The EIR should include protocols for regular monitoring of environmental conditions to provide a continuous feed-back loop by which the effectiveness of management practices can be measured.				
The EIR should define the proportional financial responsibilities of the City of Boston and the Town of Brookline for all short-term and long-term maintenance and monitoring measures related to the project.				

(1) Topic	(2) Is topic included in DEIR?	(3) Is topic adequately addressed in DEIR?	(4) Is topic presented in light of the 5 Project Objectives	(4) Comments Noted
Mitigation				
The EIR should include a summary and appropriate commitments for each project impact within the MEPA jurisdiction described in the EIR.				

MEMORANDUM

DATE: November 6, 2001

TO: EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

FROM: John F. Burckardt, Project Manager for Muddy River Rehabilitation

RE: Meeting Notice, Other Information

Please Note Location!

Wednesday, November 14, 2001

Kerr Hall,
96 The Fenway
Northeastern University Faculty Center

~ ~ ~ ~ ~ ~ See Map on Back! ~ ~ ~ ~ ~ ~

Agenda Topics:

--Discussion of Revised Draft Park Maintenance Plan
--How to Review the "official" Draft Environmental Impact Report (DEIR) and Prepare the Comment Letter to the Secretary of Environmental Affairs

5:45 p.m.	Refreshments
6:00 p.m.	Presentation & Discussion
8:30 p.m.	Adjourn

If you are unable to attend the next meeting, please call John Burckardt (617-635-4505 x6517) or email jburckardt@ci.boston.ma.us.

Other Information:

1. Meeting Summary, CAC Meeting of October 29, 2001.

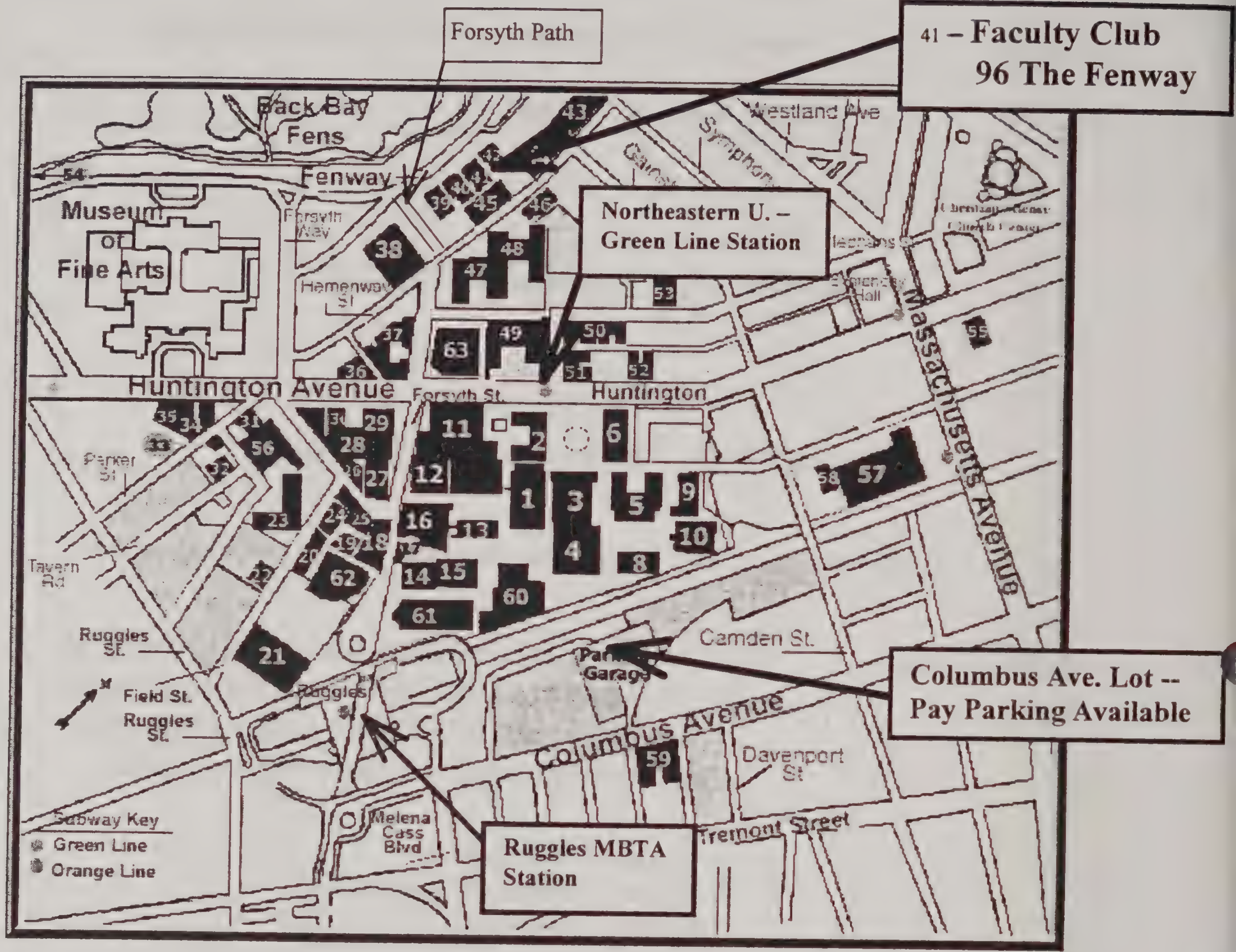
   *Please review the meeting summary. Submit written comments within 7 calendar days John Burckardt by fax (617-635-3256) or e-mail (*jburckardt@ci.boston.ma.us*) The Meeting Summaries will not be amended and re-issued, but the written comments will be distributed to the CAC and added to the file.*

2. **Boston Gatehouses** in Back Bay Fens:

   Boston Water & Sewer Commission will be issuing an **Environmental Notification Form** (ENF) in December 2001 regarding the rehabilitation of the exterior of these structures. The CAC will be notified when the ENF is published.

Directions to
Northeastern University Faculty Club
Kerr Hall, 96 The Fenway

NORTHEASTERN UNIVERSITY CAMPUS



From The Fenway (walking):

The Faculty Club is at 96 The Fenway, between Westland Avenue and the Museum of Fine Arts.

From Green Line (E Train):

Get off at Northeastern U. stop and walk to Forsyth St. end of platform.
Right on Forsyth St. and walk to end. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Orange Line:

Exit at Ruggles Station. Use the Forsyth Street exit. Walk 2 blocks, cross Huntington Avenue (traffic light) and continue one more block. Cross Hemenway Street (Stetson Hall, NU dorm on right) and continue along a footpath between Forsyth Dental (#38) on left and apartments on right. Take a right at The Fenway, and the Faculty Club is the 3rd building on the right.

From the Parking Garage:

Cross the tracks using the concourse through Ruggles MBTA station. Next, follow direction (above) from Ruggles Station to the Faculty Club at 96 The Fenway.

Emerald Necklace Citizen's Advisory Committee

Northeastern University Faculty Center

Kerr Hall

Wednesday, November 14, 2001
6:00p.m. - 8:30p.m

Agenda

I. Welcome, Opening Remarks & Comments Received 6:00 - 6:15

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Griesbach, MA Office of Dispute Resolution, Assistant Facilitator
John Burckardt, ***P. E****, Project Manager*

II. Discussion of Consultants' work on Draft Park Maintenance Plan 6:15 – 7:15

- Tim Marshall's Draft Park Maintenance Plan

III. Discussion of Review Process for DEIR 7:15 – 8:00

IV. Process Issues/Organization **8:00 – 8:30**

- Distribution of DEIR
- CAC Replacements
- CAC Correspondence
    - Irene Gillis' letter
    - Follow-up re: Richard Heath's resignation
    - Letter from George H.

- Brookline Project Impact (Isabella)

MEMORANDUM

DATE: November 12, 2001

TO: Emerald Necklace Citizens Advisory Committee

FROM: John F. Burckardt, Project Manager

RE: Revised Draft – Park Maintenance Plan
Muddy River Parks of the Emerald Necklace

Enclosed is a copy of the updated draft of the Maintenance Plan for the Muddy River Parks of the Emerald Necklace, as revised by Tim Marshall of ETM Associates, LLC. This includes addressing some of the previous CAC comments as well as new sections (pages 20 to 41) on Maintenance Guidelines and Maintenance Recommendations.

Please note:

- Tim has incorporated as many CAC comments as time permitted. However, not all CAC comments to date have been addressed in this draft. Nevertheless, all CAC comments will be considered and incorporated as appropriate for the draft that will be included in the Draft Environmental Impact Report (DEIR).
- New sections on maintenance standards and maintenance recommendations are included in pages 20 to 41.
- Some more detail on implementation strategies will be included in the draft for the DEIR. These details will address possible ways to "fill the gap" using parks department staff, contracted work, volunteers, and public/private partnerships.

We will be discussing this the next CAC meeting on **Wednesday, November 14, 2001**, 6 pm at **96 The Fenway** (Northeastern University's Faculty Club.

If you cannot make the meeting, but would like to offer comments, please contact me at:

John F. Burckardt
c/o Boston Parks and Recreation Department
1010 Massachusetts Avenue, 3rd floor
Boston, MA 02118
(617) 635-4505
(617) 635-3256 fax
jburckardt@ci.boston.ma.us

1. Introduction

The Emerald Necklace was conceived and designed as a chain of green spaces extending from Boston Common to Franklin Park. The focus of this study is that portion of the Emerald Necklace adjacent to the Muddy River from Ward's Pond to Charlesgate, called the Emerald Necklace – Muddy River Parks. The total study area is approximately 184 acres of which 42 acres is water.

The park system called the Emerald Necklace, which runs through Boston and Brookline, appears to be a natural landscape. However, these green spaces, like Central Park, are far from natural. Constructed in the late 1890s, the Emerald Necklace took nearly twenty years to create and is recognized as one of Frederick Law Olmsted's finest works. The Emerald Necklace is a designated Boston landmark, and is also listed on the National Register of Historic Places.

Olmsted envisioned the park system as a common ground to which all people could come to escape the noise, pollution and overcrowding of nineteenth-century urban life. He created a path and parkway system to link the parks and the surrounding neighborhoods. He reshaped the existing landscape to enhance its picturesque qualities, planting densely with diverse species of trees and shrubs and adding a few carefully sited architectural features including bridges and other park structures. The parks in the Fens and along the Muddy River were designed to solve major drainage and engineering problems.

In the 1870s the Back Bay Fens was a tidal salt marsh that had become foul smelling and prone to flooding as adjacent urban development increased. Olmsted's challenge was to provide a storage basin for storm water and to divert the sewage flowing into the Fens so the marsh could be restored to ecological health. Olmsted's design creating a meandering stream bordered by wide reaches of low-lying marsh and new naturalistic-looking landscapes.

The Muddy River had become clogged and polluted by nearby development. Olmsted sculpted the waterway to create a gently winding stream. The new parkland, planted with a variety of trees and shrubs, offered a welcome contrast to the city.

For the purposes of this study, the Emerald Necklace has been defined as follows:

Emerald Necklace – Muddy River Parks

The parks from Charlesgate to Wards Pond to include Charlesgate, Back Bay Fens, Riverway and Olmsted Park from curb to curb.

Muddy River Restoration Project

The park areas within the contract limit line of the Muddy River Restoration Project.

Both areas are shown on the maps that follow. See Figures 2.1 to 2.3.

Maintenance of the Muddy River Parks of the Emerald Necklace is divided among three primary agencies:

- City of Boston maintains about 117 acres of which 24 acres is water;
- The Town of Brookline maintains about 32 acres of which 8 acres is water;
- The Metropolitan District Commission maintains about 35 acres of which 4 acres is water;

Each of the agencies is responsible for maintenance of its areas of responsibility. There is no management entity responsible for coordinating or ensuring that ongoing maintenance is done to a specific set of standards or practices. In addition, funding maintenance for each of the three agencies comes from different sources. As a result, different management objectives, maintenance standards, resources, capital improvements and technical expertise is found throughout the Emerald Necklace – Muddy River Parks. Options for a operating model for the Emerald Necklace is the task of a separate study being done by Brown and Rowe and are not included in this report.

While this report recognizes the responsibilities of the different agencies responsible for maintenance of the park, we have attempted to view the park and its maintenance needs as a whole and not Boston's, Brookline's, or the MDC's responsibility.

2. Current Park Maintenance Responsibilities

Current maintenance in the Emerald Necklace – Muddy River Parks is done by the Boston Parks and Recreation Department, the Town of Brookline Parks and

Open Space Division and the Metropolitan District Commission. See Figures 1.1 to 1.3 for maps showing the park areas that each agency is responsible for.

Most of the current maintenance efforts consist of basic maintenance tasks such as delittering, emptying trash receptacles, mowing, and some contract tree work.

Boston

The Boston Park and Recreation Department is responsible for the majority of the Emerald Necklace-Muddy River Parks, approximately 117 acres of which 27 acres are water. Park maintenance throughout Boston is organized into 6 regions with Region 5 responsible for the Emerald Necklace. See organizational chart for BPRD maintenance in Figure 4.1. In addition, the Parkman Crew, a specialized horticulture crew, does work in the Emerald Necklace as well as the Public Garden and other Parkman sites. Other specialty crews, such as the trades and the tree crew cover the entire city. The Parkman program funds some contract work done in the Emerald Necklace – Muddy Rivers Parks.

Boston maintenance includes:

- Daily park maintenance – primarily cleaning and mowing
- Trades
- Horticulture
- Tree Maintenance

In addition, the Parks Department is responsible for 8 pedestrian and 1 vehicular park bridges The City of Boston Public Works Department (BPWD) is responsible for 6 bridges (4 vehicular and, 1 pedestrian bridge).

Brookline

Brookline is responsible for approximately 32 acres of the Emerald Necklace-Muddy River Parks of which 8 acres are water. The Brookline portion of the Emerald Necklace extends from the Riverway to Olmsted Park. The Parks and

Open Space Division is located within the Department of Public Works. See organizational chart in Figure 4.2. Park maintenance is organized into 3 geographical zones (two of which are responsible for the Emerald Necklace-Muddy River Parks), a town-wide ballfield crew, horticulture and trash crew.

Brookline maintenance includes:

- Daily park maintenance – primarily cleaning and mowing
- Trades
- Horticulture
- Tree Maintenance
-

Brookline is also responsible for the Carlton Street footbridge.

Metropolitan District Commission (MDC)

The MDC is responsible for Charlesgate area, the former Kelly ring site, the parkways, catch basins and a 25' strip within the park from the curb totaling approximately 35 acres of the Emerald Necklace – Muddy Rivers Park of which 4 acres are water. The Charles District crews who cover an area that includes the Esplanade, Charles River Basin, and the McGrath/O'Brien Highway do MDC maintenance. The MDC's portion of the Emerald Necklace is but a small portion of the Charles District.

MDC maintenance consists of mowing, from April-October on a 10-day mowing cycle, delittering and fall leaf removal from late October through mid-November.

Boston Water and Sewer Commission (BSWC)

The BWSC, through agreement with the BRPD, provides maintenance for the culverts along the Muddy River. Work includes removal of debris and sediment from culverts and critical locations such as at the upstream end of the culvert under the former Sears parking lot.

Boston Art Commission (BAC)

The BAC is responsible for the monuments and statues in the park.

Massachusetts Highway Department (MHD)

The MHD is primarily responsible for roadways and 6 of the 24 bridges throughout the Emerald Necklace-Muddy River Parks.

The Massachusetts Turnpike Authority (MTA)

The MTA is responsible for the I-90 Bridge and adjacent CSX Railroad bridge that crosses the Muddy River in the Charlesgate area.

2. Classification Physical Areas in the Emerald Necklace-Muddy River Parks

Park Sectors

The Emerald Necklace – Muddy River Parks has been divided into 7 sectors by ETM Associates for analysis and planning purposes – taking into account maintenance needs and the characteristics of the physical areas. See Table1.

The sectors for this study are listed below and shown on Figures 3.1to 3.3:

Sector I	Charlesgate
Sector IIA	Back Bay Fens North: Victory Gardens/Mother's Rest
Sector IIB	Back Bay Fens Central: Rose Garden/Clemente Field
Sector IIC	Back Bay Fens South and Sears Parking Lot
Sector III	Riverway
Sector IVA	Olmsted Park North: Leverett Pond/Daisy Pond
Sector IV B	Olmsted Park South: Wards Pond/Willow Pond/Nicholson Hill

Physical Areas

The physical areas in the Park can be divided into four categories

a. **Natural Areas** – Open, natural areas, subdivided into:
    - Woodlands
    - Parkland
    - Planted Areas
    - Water (River & waterbodies)

b. **Paved Areas** – Open to the elements, but covered by a man-made surface, including parking lots, playgrounds, paths, athletic fields etc.

c. **Structures** – Enclosed or partially enclosed areas (buildings, or shelters) or other man-made three-dimensional entities (monuments, bridges).

d. **Park Furniture** – Drinking fountains, light standards, trashcans, and benches.

The amount of each type of area in the park will be shown for each sector. **(To be done)**

3. Defining Maintenance Work

Despite the complexity of the task of measuring park workload, the process is essential. It has been said that you can't manage if you can't measure, and you can't measure if you can't define. Currently there is no park-wide standard or systematic method for measuring work in the Emerald Necklace-Muddy River Parks.

A good classification system lends itself to work measurement and the application of work standards; it supports management decision-making at all levels (e.g., in deploying personnel and equipment), and it is based on an understanding of the nature of park maintenance work.

Three critical variables condition the analysis of park maintenance work: 1) the nature of the task, 2) skill levels of those performing the task, and 3) the physical setting. For example, cleaning a paved surface is different from cleaning a densely wooded one, both in type of equipment used and in the time it takes per acre.

Maintenance tasks can be classified into four types:

General Maintenance – Work having to do with the appearance of the park and sanitary conditions in the park, including litter pick-up, collection of trash from receptacles.

Horticultural Care - Work having to do with care of shrubs, perennials, small trees, turf care and mowing, pruning, woodland and waterbody management and tree care.

Repair and Preservation – Work having to do with the proper functioning and safety of park equipment and facilities, preventative maintenance, and repair, such as pruning, bench painting and repair, park structure maintenance, or graffiti removal.

Operations and Special Events – Work related to the use of park facilities and equipment. This is often seasonal or special event related, such as setting and removing barricades.

4. Relationship Between Usage and Maintenance

Park users not only greatly increase the time required to repair and maintain a park's physical setting, but also create a daily mess. Cleaning up after visitors ranks far above any other task as the most time-consuming routine park task. Services to special park users, such as special events and organized recreational groups, also add a considerable amount of work, especially during the peak summer season.

In general, the greater the number of users in and around parks, the greater the amount of maintenance work that needs to be done. How long people stay in the parks and what they do when they get there is also important. Five busy vandals can create more work than 1,000 people strolling through the park.

Of course, maintenance also impacts use. If the parks are dirty, benches are broken, and ball fields are not playable or open, people won't enjoy the parks as much, and eventually may stop coming. If parks are well maintained, then more people will come.

Given this interdependence between maintenance and use, it is important that the parks "keep up" – that as the number of users continue to increase, the quality and quantity of maintenance must keep pace.

5. Measuring Workload

Measuring workload in a complex maintenance environment is far from simple. First, there are many different kinds of work measures: amount of work; quality of work; frequency; speed (amount of work per unit of time); and time to complete. The different work measures are inter-related – one can usually complete a task more quickly by compromising on the quality of work.

Outside or uncontrolled variables which affect workload and complicate work measurement: the impact of use such as the number of users and their behavior (e.g., vandalism, special events); the intensity of use (e.g., heavy use during large special events); the culture or style of the workplace; the physical conditions, such as terrain and weather; and the difficulty of the task itself and level of skills possessed by the staff. Deferred maintenance, capital projects in process, and future capital projects all have an impact on workload. In the Emerald Necklace-Muddy River Parks, the primary variables are the park's physical variations, the culture or style of the workplace and future capital projects.

6. Measuring Current Work

The process to measure the current the Emerald Necklace-Muddy River park maintenance work involved several iterations of interviews, observations, and information from the three agencies. The following is an outline of the methods used.

- Interviews were conducted with senior staff and field staff of the three agencies to elicit information on current staffing.
- Review of existing organizational charts and work schedules
- Existing staff were divided into supervisory and field staff

Full time equivalents were developed to reflect the actual percentage of time maintenance staff spent in the Emerald Necklace – Muddy River Parks

- Boston: Region 5 crew of 4 spends approximately 80% of it time in the Emerald Necklace – Muddy River Parks which equates to 3.2 FTEs, while the Parkman horticulture crew of 3 spends abut 40% of its time or 1.2 FTEs. Boston maintenance staff is augmented by 1.1 FTE of supervisory support, including the Director of Historic Parks (50%), Historic Park Landscape Architect (20%), Parkman Funds contract Project Manager (40%).

- Town of Brookline; Two zone maintenance crews of 4 persons spends 25% of its time in the Muddy River Parks of the Emerald Necklace or .1.15 FTE, while Forestry spends .1 FTE, Brookline maintenance staff is augmented by .6 FTE supervisory support and Arborist (5%), Operations Manager (10%) and Landscape Architect (5%)

- MDC: MDC maintenance crews of 4 persons from the Charles District spends approximately 25% of its time in the Muddy River Parks of the

Emerald Necklace which equates to 1.0 FTE which is supplemented with supervisory staff equal to .1 FTE.

The estimated current staffing for work in the Muddy River Parks of the Emerald Necklace by maintenance field staff and supervisors is shown below:

Table 2. Current FTE's for Emerald Necklace – Muddy River Parks

Organization	Work Force	Managers/ Supervisors (FTE)*	Workers (FTE)*
Boston	M & O	.3	3.2
	Horticulture	.4	1.2
	Forestry	.1	.3
	Trades	.2	1.2
Brookline	M & O	.5	.75
	Horticulture	.25	.4
	Forestry	.25	.1
	Trades	.1	.25
MDC	M & O	.1	1
Total	**10.6**	2.2	8.4

*** FTE = Full Time Equivalent**

8. Measuring Current Productive Time

The answer to the question of how much time is available from a work force of 10.6 peoples is developed below and summarized in Table 3.

- **Total Time**
  The base unit for measuring potential productive work is the number of hours a person works a year. The total number of hours is the maximum someone can work, deducting weekends. For the Muddy River Parks of the Emerald Necklace that number results in 260 days per year, times 8 hours a day, times a staff of 10.6 (FTE), for a total of 22,048 hours.

- **Off-the-Top Deductions**
  The total represents only a starting point in calculating the work force's productive time. Workers are entitled to a certain number of holidays and vacation days, excused absences, emergency absences and time for breaks.

- **Lost Time**
  No worker is constantly productive, nor is any organization perfectly efficient. Lost time includes sick leave, leave without pay, workers compensation, and Family Leave Act.

- **Non-Productive Time**
  In addition, time is spent away from work for travel time, trips to the dump, change and wash up, and waiting time for vehicles or equipment.

- **Loss Time Due To Inclement Weather**
  In times of inclement weather (rain and snow), there is little outside maintenance work a park worker can do.

- **Net Productive Time**
  After all the deductions are subtracted from the gross time available, the net productive time per worker is approximately 1,560 hours per year. The estimated net productive time for existing park maintenance is: 10.6 F.T.E. x 1,560 hrs/year, which equals 16,536. hours/year.

- **Supplementary Available Hours**
  Contract Work
  Correction Department Workers
  Boston Youth Fund (seasonal)
  Parkman Contract Work
  City Year and Volunteers – currently minimal
  "Park Partners"

Based on staff interviews, it's estimated that the total supplementary work hours for the Muddy River Parks of the Emerald Necklace is 2,000 – 3,000 annually.

Table 3. Annual Net Productive Hours for Park Maintenance

Total Hours		
8.4 FTE field staff x 260 days/yr x 8 hrs/day		17,472
2.2 supervisory staff x 260 days/yr x 8 hours/day		4,576
Total Hours	**22,048**	
Deductions (Estimated @ 25%)		
Off-The-Deductions		
Lost time		
Non-Productive Time		
Inclement weather		
Total Lost and Non-Productive Time	**5,512**	
Total Net Productive Time	**16,536**	

7. Current Maintenance Work

Current maintenance standards vary throughout the park. A site walk on August 4th, 2001 found many areas of the park with different maintenance standards and practices:

- Many areas with little or no maintenance
- Inconsistent mowing standards and practices

- Areas of erosion
- Different bench treatments
- Different trash containers
- Broken path edges
- Evidence of vehicles driving across the lawns
- General lack of tree maintenance
- Differing walkway materials
- A number of small landscape improvement projects that had been done by both Brookline and Boston over the past few years that had not done well due to a lack of ongoing maintenance
- Poor maintenance of recent landscape improvements due to the type of plant material selected
- Some graffiti, particularly on trash barrels

The inability to maintain newly improved areas is a serious cause for concern and points to the fact that existing resources can do little more than basic park maintenance. Additional maintenance resources will be needed to meet and sustain the workload from newly completed capital projects.

While a cursory inspection of the parks indicates that existing park maintenance is basically acceptable, a closer look shows that many areas have been let go, the overall turf standards need improving, tree care is needed and horticultural care is lacking and there is no existing woodland management efforts. In other words, just the basic park maintenance, cleaning and mowing, and some basic tree work is currently being done. The lack of uniform standards and practices only serves to reinforce the fact that multiple agencies have maintenance responsibilities.

It should be noted, that the new plantings near Leverett Pond in Brookline highlighted a serious ongoing and future maintenance problem. The particular type of rose that was selected for the planting areas has serious maintenance implications. This particular rose is a very aggressive grower and quickly spreads beyond the boundaries of the planting area. In addition, access by maintenance staff is very difficult due to the dense spreading nature of the plant and its small thorns. The inability of the maintenance staff to "wade" into these planting beds to weed and remove litter results in no or little maintenance. In this particular instance, it's not so much an issue of staffing as much as it's the species of the plant material itself which makes maintenance very difficult, if not impossible. Selection of plant material should consider not only its historic and environmental appropriateness, but also the ability of staff to maintain it.

Given the current staffing levels, it is not unexpected that little more than basic maintenance is done.

8. Setting Higher Maintenance Standards

The Emerald Necklace – Muddy River Parks landscape consist of different landscape types with different maintenance needs:

- Woodlands – natural areas characterized by the Ward's Pond area with less intense usage. These areas should be managed as woodlands requiring low levels of maintenance but need staff with specialized skills, particularly in urban forestry or woodland management

- Parkland – park areas characterized by grassland covered by a tree canopy. This is the predominate landscape type found in the Emerald Necklace – Muddy River Parks and require intensive maintenance efforts. Grass needs to be mowed and maintained on a regular schedule, litter picked up, and trees pruned and maintained.

- Planting Areas (shrubs and perennials) – these areas are characterized by plantings of ornamental shrubs and perennials. Understanding the character of these plantings will be important to performing proper maintenance practices. Some plantings will need regular pruning or trimming (hedges) while others will be allowed to grow with limited pruning to reach their desired height and character.

- Embankment Plantings – plantings along the water edge will need regular maintenance including removal of invasive plant species.

- Meadows – are characterized by longer grass mowed a limited number of times a year.

- Site Furnishings such as benches, trash cans, signs will need regular maintenance.

Park staff agreed that higher maintenance standards are needed. The following areas are priorities:

- Horticultural Care

Additional resources are needed to meet the horticultural needs of the park. Shrub plantings are in need of watering, weeding, pruning and fertilizing.

- Higher Standards of Turf Maintenance
  Higher standards of turf care including a seven day mowing schedule, reseeding, fertilizing, aeration, and soil testing are needed to ensure a high quality turf.

- Tree Care
  The existing trees need of pruning, thinning and in some cases removal of dead or dying trees. Pruning should be dictated by species, length of growing season and design concept – i.e. clipped versus natural-style plantings.

- Woodland and Waterbody Management
  Additional specialized crews are needed for woodland and waterbody management including control of invasive species as well as.

- Erosion control
  As a mature landscape with considerable use, the Muddy River Parks of the Emerald Necklace suffers from numerous erosion problems. Controlling erosion saves work in

  the long-run, by preventing the silt build up in lakes, ponds, and the clogging of catch basin. It also significantly improves the appearance of the parks

- Repair
  Park features, such as benches, trashcans, catch basins, soft surface paths, - which are easy to overlook and make a second priority—need regular maintenance.

Park Standards

Setting higher maintenance standards entails more than articulating increased hours for maintenance. Proper management, staffing levels, training, and the right equipment are critical for achieving higher maintenance standards.

In interviews with park staff site, observation, and estimated benchmarking using standards developed by the National Recreation and Park Association and the

Professional Grounds Management Society, we estimate that 35,500-43,200 hours are needed annually to bring park maintenance to a higher level.

Establishing maintenance standards can be done in a number of ways:

- Cost per unit of maintenance work;
- Square foot cost
- Establishing performance standards based on work activities

During interviews with staff and senior management, there was a general consensus that the landscape maintenance at the Arnold Arboretum was a standard for maintenance of the Muddy River Parks of the Emerald Necklace. On October 11,2001 I met with Peter Del Tredici, Director of Living Collection, to gain an understanding of the current maintenance efforts at the Arnold Arboretum.

The Arnold Arboretum has about 232 acres requiring regular maintenance. The Arboretum landscape is broken down accordingly:

- 150 acres of mowed lawn
- 5 acres of water
- 60 acres of naturalized vegetation including woodlands and meadows
- 3 acres of greenhouse and nursery
- 14 acres of gardens

The Arboretum has 13 full-time and 15 seasonal staff performing park maintenance. The Arboretum spends little or no time delittering or emptying trash cans, unlike public parks where trash removal is the predominate maintenance task. In fact, the Arboretum has less than 12 trashcans.

Key factors for higher maintenance standards at the Arboretum are:

- Park-based staff
- Skilled staff
- Stable full-time staff with knowledge and commitment to maintenance of the Arboretum
- Combination of staff who are generalists supported by specialized staff

It should be noted that the Arboretum is strictly, not a public park. While open to the public, the Arboretum is first and foremost a research facility and many management decisions are made with a curatorial perspective. The Muddy River Parks of the Emerald Necklace, on the other hand, is a public park and management decisions are made in that context.

Using the Arboretum as an example, a square foot cost for maintenance can be developed that can serve as a starting point for looking at maintenance costs for the Muddy River Parks of the Emerald Necklace, although there are many differences and variables between the two, for looking at the Muddy River Parks of the Emerald Necklace.

To determine a square foot maintenance cost for the Arboretum:

- Annual budget for landscape maintenance excluding the greenhouse and nursery is $962,000.
- In most parks, approximately 65-75% of the annual operating budget is for salaries. Using 70%, approximately $674,000 is spent annually for salaries.

Annual cost for salaries = Cost per square foot. $674,000 =
$0.07cents/sq. ft.
Total Square Feet (232 Acres X 43,560 sq. ft/acre) 10,105,920 sq. ft.

If we assume that $0.07/sq. ft. cost for the Muddy River Parks of the Emerald Necklace would be somewhat higher because due to the time is spent removing trash and emptying trashcans, then a cost of .10/sq. ft. would serve as a useful starting point. The cost for maintenance of Prospect Park in New York City is about $0.12 cents/sq. ft.

$0.10 x 8,000,000 sq. ft. (184 acres x 43,560 sq. ft./acre) = $800,000.
If we assume an average salary cost of $30,000/employee;

$800,000 = 25 total FTE's, which is very close to our estimated total of
$30,000/FTE 10.6 existing FTE's + 12-17 additional FTE's.

This square foot cost is only to be used as a starting point for estimating future maintenance costs. There are many other variables that we will need to account for.

Park features, such as benches, trashcans, catch basins, soft surface paths, - which are easy to overlook and make a second priority—need regular maintenance.

11. Impact of Capital Projects

The increase in capital spending will serve to increase the gap between available and needed maintenance hours. While under construction, the areas affected by capital projects are usually closed off to the public for the length of the project, which slightly reduces the total maintenance workload. When completed and reopened, the renovated site, will add to the existing park maintenance load. The Muddy River Restoration Project will add dramatically to the maintenance load. The table below shows the increased Muddy River Restoration Project planting

Table 4. Increased Planting from Muddy River Restoration Project

Project	Trees	Low Shrubs	Med Shrubs	High Shrubs	Lawn Areas	Wetland Plants	Perenn.
Wards Pond	1	2,425	2,875	1,750	8,350	2,360	1,625
Willow Pond	7	20,175	4,900	13,660	23,720	1,650	4,700
Leverett Pond	24	21,088	7,835	1,468	112,615	3,860	
Riverway	57	51,308	51,955	34,345	110,480	18,090	
Sears Parking Lot	28	7,700	3,050	5,400	25,200	1,260	
Back Bay Fens	98	24,635	59,515	34,450	389,100	32,330	
Total Trees	**215**						
Totals (square feet)		**127,331**	**130,130**	**91,073**	**669,465**	**59,550**	**6,325**
Totals (acres) 24.5		**3**	**3**	**2**	**15**	**1.3**	**0.15**

When the Muddy River Restoration Project is completed, there will be an increase of 24.5 acres of newly planted areas that will require regular maintenance, particularly after the two-year maintenance guarantee period expires. One of the planting requirements recommended by the Citizens

Advisory Committee (CAC) is that the Contractor(s) be required to maintain all plant materials for two years after acceptance of the work.

Maintenance for the new plant material during the two-year maintenance period includes:

- Watering
- Fertilization
- Weeding
- Mulching
- Disease and Pest Control
- Plant Replacement
- Control of Invasives

It should be noted that the contractor would be responsible for only those areas within the contract area. It's likely that there will be other landscape areas outside and adjacent to the confracted area that will need mowing,, horticulture, delittering and emptying of trash receptacles, etc. during the two-year maintenance period.

Once the two - year maintenance period ends, Boston, Brookline and the MDC will assume responsibility for maintenance. The proposed construction schedule for the Muddy River Restoration Project extends from 2002 thru 2009. See Figure 5.1. The two-year maintenance periods will follow completed capital construction. Increased agency maintenance responsibilities will be phased, with the greatest maintenance impact occurring between years 2006-2008. The MDC will be responsible for the Charlesgate project area in early 2005, Boston will assume increased maintenance responsibilities beginning in early 2006 and Brookline will assume increased responsibilities in early 2008.

It is estimated that a total of 16,000-21,350 hours will be needed annually to maintain the newly restored Muddy River Restoration Project areas.

10. The Gap Between Needed Hours and Available Hours

The estimated amount of time required for maintenance of the Muddy River Parks of the Emerald Necklace is 35,500 - 43,200 hours annually. See Table 5. The gap between needed hours and available productive hours is estimated to be between 18,028 - 25,728 hours, which equals 12-17 FTE's.

The challenge is to develop strategies that will close as much of the gap as possible through:

- Better management
- Increased staff productivity
- Use of outside contractors
- Reducing non-productive time
- Increased staff

leaving a relatively smaller portion of maintenance to be dealt with through priority setting or eliminating work.

Table 5 Summary of Hours Needed to Maintain the Muddy River Parks of the Emerald Necklace

	Hours at Current Standards	Hours at Higher Standards	Muddy River Restoration Project Impact**	Additional Hours
General Maintenance	10,296	21,000-26,000	7,200- 9,600	10,700-15,700
Horticultural Care	4,160	14,000-17,280	6,400-8,540	9,840-13,120
RepairPreservation	3,016	3,500-4,320	1,600-2,135	484-1,304
Operations/ Special Events		1,800-2,160	800-1,100	1,800-2,160
Totals*	**17,472**	**35,500-43,200**	**16,000-21,350**	22,824-32,284

* Totals are for field staff, and do not include supervisory or management staff.

** Included in Hours at Higher Standards

13. Higher Maintenance Guidelines

Maintenance Guidelines

Planted Areas (shrubs and perennials)

Quantities of Planted Areas

Shrub Plantings
Perennials
Groundcovers

Picture of well maintained shrub

Shrubs and groundcovers provide numerous functions and form a vital part of the park landscape. When properly selected and maintained, they serve as focal points, accents, barriers and provide an aesthetic appearance, which compliments and enhances the surrounding park landscape.

The annual maintenance program for new and established plants depends on the type of plant material and the skill levels of the personnel responsible for the work. Maintenance of planted areas includes:

Watering

Insufficient and excessive amounts of water will induce plant stress and may eventually cause sever decline or death. Type of plant, size, exposure and competition with surrounding trees, shrubs and groundcover affect the amount of water needed. A general rule of thumb to estimate proper soil moisture content is to roll a small sample of soil into a ball, and if it crumbles when rubbed or squeezed, it probably has adequate moisture. If the soil can't be worked into a ball, the soil is too dry to provide sufficient water to plants. If the ball does not crumble when wet rubbed, the soil is too wet.

Fertilizing

The type and amount of fertilizer varies according to plant species. The best time to fertilize is before or during the plant's period of active rapid growth in spring and/or late fall. Deciduous should be fertilized after their leaves drop. Avoid late summer applications of nitrogen as this stimulates new top growth that will not have sufficient time to harden-off before winter.

Mulching

Maintain about a 2-3 inch layer of mulch throughout the year. This will provide the constant supply of humus that plants need. Apply mulch in early spring to prevent soil moisture loss caused by early summer hot weather. Apply mulch in early winter to protect against plant roots from drying out as soil thaws and refreezes.

Pruning

Pruning requires a full understanding and knowledge of the growth and flowering habits of various types of shrubs; that is, to know what, when, and how to prune. Shrubs are pruned to, 1) remove dead, diseased, or damaged wood; 2) to correct, rejuvenate of balance the shape of a plant; 3) to maintain or improve floral bloom; and 4) to shape them as design elements of an overall landscape design – i.e., as a formal hedge, or more naturalistic planting.

Evergreens require minor pruning to remove dead and diseased branches or to remove spent blossoms before they go to seed.

Shrubs are also pruned according to their season of flowering, that is, those that flower on old wood and those that flower on new wood. In general, prune shrubs that flower before July immediately after they bloom. Prune shrubs that flower after July in the winter or early spring. Roses are pruned more often than any other shrubs.

It should be noted, that many shrubs should not be pruned or do not require regular pruning, unless they are to be maintained as formal hedges. For example, do not prune any shrub in a shape (ball, cone) unless it is in a formal garden and an integral park of the design.

Pest control
A successful pest control program requires knowledge of the causes and symptoms, which affect plant stress. This includes disease, insect and weed infestation, mechanical damage, drought, poor soil conditions, nutrient deficiency, etc. Once a problem has been diagnosed, make sure the appropriate staff follows the approved control measure for managing the pest.

Winter Protection
Generally a combination of several factors causes winter injury to plants. This includes the plant's condition, weather influences, site factors and maintenance practices. Improper or deferred maintenance practices could cause winter injury. Excessive or late fertilizer application induces soft vegetative growth, which will not harden off before winter. Over mulching reduces aeration and encourages root formation in the mulch layer.

There are a number of maintenance practices, which may reduce winter injury to plants. Correct soil drainage problems, or relocate plants. Water the plants as needed throughout the summer and fall. Deep soak the roots of shrubs at least once a week between mid-October and mid-December. Spray antitranspirants on young plants and those sensitive to win-burn damage. Fertilize evergreens with a controlled release fertilizer after the first killing frost. Add mulch if needed or loosen it to increase its insulation capabilities. If injury has occurred, delay corrective action until spring. It is much easier to determine the actual extent of damage when new growth begins. Lightly fertilize and water thoroughly during the following summer.

Groundcovers
Groundcovers help to enhance and compliment the visual character and scale of the landscape. They provide texture, form and color contrast and a can be used to correct landscape problems such as soil erosion, wet and dry areas, difficult mowing areas, etc.

Once fully established, most groundcovers will require some maintenance. Weeding is extremely labor intensive and plants roots can be severely damaged by cultivating or pulling weeds. In addition, fall leaf removal can be difficult in areas with extensive groundcovers.

Pest Management

Pests become resistant to pesticides, which are used routinely. Routine use of the same pesticide kills susceptible pests within a population, simultaneously, it leaves the resistant individuals to reproduce "pesticide resistant" offspring in the following generations. Integrated Pest Management (IPM) practices should be applied wherever practicable.

Integrated Pest Management (IPM)

IPM is a decision making process that determines if you need pest suppression, when you need it where you need it and what strategies or tactics to use.

In IPM, pest populations are monitored on a regular basis. Monitoring is the key element in a successful IPM program. Park managers must realize that they can accept a certain pest population level. The manager should take a realistic approach and concentrate on managing the population at tolerable levels.

Through regular monitoring the manager is always aware of the pest's life cycle and its population level, and thereby knows when the population is building to the damaging or injury level. Certain pest management strategies may require the use of a pesticide.

Turf

uddy River Parks of the Emerald ecklace

cres of Turf
cres of ball fields

uddy River Restoration Project
cres of Turf

No maintenance operation affects the appearance of a park more dramatically than mowing. Mowing the heart of turf care. A well-groomed patch of weeds can present a pleasing appearance while poorly groomed turf of the finest grass available will not look good. Without mowing, most turf grasses will grow to heights of 2 to 3 feet. Limiting turf to 2-3 inches or less puts tremendous stress on the plant. Proper mowing practices and equipment minimize this stress

Fertilization

The health of turf grass is dependent on a fertilization program derived from sound soil test results. Fertilizer feeds the roots, which in turn provide nutrients to the leaves and stems.

Lime

The specific lime requirements for any area can only be determined by a soil test. Lime can be applied at any time of the year, but late fall or early winter is preferred because the rain, melting snow, and freeze-thaw cycles all help work the lime into the soil there is also a slight advantage to applying lime immediately following aeration. Lime should not be applied within a week of fertilization.

Aeration

Constant use of turf areas, whether ballfields or open turf areas leads to soil compaction. Reversing compaction is a slow process. Aeration help to improve the rooting environment, by making it easier for air and water to enter the soil, while the nature structure-building processes proceed.

Fall is the best time to aerate.

Annual Turf Renovation

Periodic or cyclic renovation of turf areas should be anticipated. Frequency can vary from yearly to every 5 years depending on the use, level of care, how well it was established, weather conditions and many other factors. A soil test should always precede renovation to determine lime and fertilizer needs. The degree of renovation required can vary from little more than overseeding and rest, to complete rebuilding, starting with regarding.

Weeds

A good weed management program is based on the premise that a healthy vigorous turf is most resistant to weed invasion. This means that cultural practices (fertilizing, lime, mowing, species selection, etc.) are conducive to healthy vigorous turf. A healthy turf will out compete most weeds.

Water Bodies (to be developed)

Water is an important feature of the Muddy River Parks of the Emerald Necklace. Given the importance of these features, it is essential that they be kept in good condition, both in the treatment of the edges and in the quality of the water.

- Trash removal
- Removal of duckweed and other water vegetation
- Removal of invasive vegetation

Trees

The Muddy River Parks of the Emerald Necklace

Area of Tree Cover

Muddy River Restoration Project

Well Maintained Trees Add Visual Element to Park Landscape

More than any other landscape element, trees provide the most prominent visual component in the landscape. Tree preservation and management involves the protection the canopy, trunk and roots.

Pruning

Periodic removal of dead and broken branches improves the appearance and structure of trees, but more importantly eliminates breeding sites for insect and disease organisms. It is desirable to remove branches that may be crossing or rubbing with another. Branches that exhibit a narrow angle of attachment to the trunk should be removed because the vascular tissues are compressed within the branch and structural failure of the branch becomes more likely as the tree ages. It is also important to thin the canopy of trees to remove wind resistance, limit storm damage and allow sunlight to filter down to aid in turf development.

Fertilization

Disease Control

Tree Protection Measures

Tillage or cultivation to promote turf establishment should not take place within the drip line of trees as this causes substantial injury to tree roots.

Repeated nonselective applications of herbicides such as round-Up should be avoided, as toxicity to root systems and subsequent foliage damage may occur

Trees should be protected against construction damage by installing fencing beyond the drip line (edge of canopy) of the tree. Where possible, groups of trees should be protected by a single fence. Equipment or material storage should not occur within the drip line of trees.

Trees in public parks are subject to intensive visitor use. Over time this use can have severe impacts. Ongoing public use includes the following:

- Compaction begins to change the soil
- Groundcover materials such as turf are lost or damaged
- Shrubs and understory trees are lost
- Older trees begin to decline – tops die back
- Areas become so impacted that user begin to seek other location and the site is either abandoned

To break this cycle,

Site Furnishings

- Bench maintenance – repair, replacement, painting
- Trash cans – emptying, graffiti removal
- Light poles – replace bulbs, graffiti removal
- Catch basins – cleaning,

Structures

- Masonry – repointing, graffiti removal,

Parkland

- Trash removal
-

Woodlands

Erosion Control

Erosion is a naturally occurring process. Heavy use tends to produce rapid, and drastic erosion. Erosion is harmful in many ways. Soil is transported from its original location, leaving depressions in the surface, voids, or undermined plants and structures. The soil is deposited at a new location further downstream, where it may clog waterways or fill catch basins. In addition to the physical deposits of soil particles, the fertilizers, pesticide and other chemicals lost by erosion area a major non-point source of water pollution.

The most effective method of erosion control is a healthy, vigorous vegetative cover. This may consist of a lawn, perennial groundcover, shrubs or tree canopy. Well-fertilized turf areas show less soil loss and chemical run-off than thin, under-fertilized turf.

Erosion areas should be stabilized immediately before soil loss occurs and siltation of water bodies and catch basins occurs.

14. Management Challenge

MANAGEMENT RECOMMENDATIONS

The Muddy River Parks of the Emerald Necklace should function as one entity

- **Reestablish the primacy of maintenance in the Muddy River Parks of the Emerald Necklace**

  Reestablishing the primacy of park maintenance is a key recommendation of this report. The current fragmentation of services has an enormous impact on park maintenance. The management and necessary skills to perform quality park maintenance have declined. Park maintenance requires specialized skills and creative management and entrepreneurial skills. Creative and flexible management strategies and initiatives are need to develop an integrated management structure to manage, restore, maintain and operate the Muddy River Parks of the Emerald Necklace.

  Park maintenance falls into five basic categories:

  - Cleaning and repair – his includes the monitoring of general park conditions, the removal of trash and the cleaning, painting, minor repairs to playgrounds, benches, fences, paths and so forth;
  - Preservation and conservation – includes the small-scale restoration and preventative maintenance of such artistic and historic components of the park landscape as statues, bridges, stairways, shelters, masonry walls etc.
  - Groundskeeping – includes planting, pruning, mowing, mulching, fertilizing and watering of park lawns, flowers, shrubs, and trees
  - Woodland Management – includes the specialized skills and management strategies needed to manage and maintain the extensive woodland areas
  - Waterbody Management – includes the specialized skills and management strategies needed to manage and maintain the streams, rivers, ponds, and lake areas.

  While many of the recommendations in this report address the specifics of park maintenance and operations, good management requires not only efficient and effective methods and procedures, but effective good governance as well.

- **The basic structure of accountability should be geographic.**

The Muddy River Parks of the Emerald Necklace, at present, are not necessarily experiencing the kind of active deterioration common to heavily used urban parks. Their status might be described as a gradual decline that will become more evident as the current mature trees die off while the maintenance an support staff are stretched further to perform increasingly routine duties.

The restoration of park values for the Muddy River Parks of the Emerald Necklace hinges on the ability of those who are directly involved in their management and care to perceive the parks as a living system. This will require, above all, an education program aimed at having the maintenance and support staff recognize that they are instrumental in ensuring the further health and survival of the parks. Raising the level of commitment, developing a sense of ownership, and new standards of care by the staff that are responsible for the day-to-day care of the parks are essential steps toward restoring the parks and developing the level of public awareness that will help sustain their renewal.

Several of these recommendations are mentioned under other sections; they are included here for emphasis:

- Implement a park landscape management plan to ensure that no areas of the park are neglected by maintenance and that the overall level of care is raised significantly.
- Initiate new staff training programs that build landscape maintenance skills and instill a sense of commitment to the park. Training programs and other performance standards should be combined along with new park job titles, such as Parkskeeper, to identify and reward staff and instill pride and professionalism within the Muddy River Parks of the Emerald Necklace Park
- Develop and implement a dedicated park-based maintenance program to instill a sense of ownership
- Develop and implement a tree management program and replanting plan that utilizes information from urban forestry, historical research, as well as traditional arboricultural methods.
- Develop a volunteer corps for projects such as woodland management, slope stabilization, and soil decompaction that can be a vehicle for developing skills in the community.
- Continue to develop connections with local environmental groups, community groups, state forestry programs, urban renewal programs, and other groups that can conduct restoration workshops or contribute ideas and resources.

- **To implement geographic accountability, the position of Muddy River Park Coordinator should be established.**

A coordinator position should be created that would be the point person for all maintenance work. The coordinator position would be a rotating position between Boston and Brookline. The primary responsibility would be to coordinate the deliver of maintenance services for the Muddy River parks of the Emerald Necklace. The coordinator would be responsible for:

- Chairing a monthly meeting to review and coordinate ongoing maintenance tasks;
- Be the point person for public contact for comments and complaints;
- Provide monthly report to Boston and Brookline summarizing park maintenance, critical issues or public complaints

Strengthen and Define the Roles between Public and Private Sectors

- **Define the roles of the public sector and the Emerald Necklace Conservancy as they pertain to capital projects and their ongoing maintenance.**
  Every new capital project should have a management and maintenance strategy that accounts for increased maintenance and operational support. The city agencies and the Emerald Necklace Conservancy should work together to develop a strategic funding and implementation approach for all capital projects.

  As levels of private funding increase, new capital project guidelines will be needed to provide the flexibility in the management and implementation of capital projects during design and construction.

- **The Emerald Necklace conservancy should be further supported in its role as an advocate for the Muddy River Parks of the Emerald Necklace**
  The Emerald Necklace Conservancy can play a key role in advocating for the Muddy River Parks of the Emerald Necklace. The Conservancy should be strongly supported in this effort as they continue to initiate capital projects and provide operational support.

- **Explore the possibilities of partnerships with other organizations to increase horticultural practices and skills in the parks.**
  The city of Boston and the Town of Brookline have committed to increasing it attention to how horticultural maintenance in the Muddy River Parks of the Emerald Necklace. However staff skill may be lacking. Staff who show an interest and abilities could be provided with opportunities to increase their skills. Training opportunities, perhaps with the National Park Service or Arnold Arboretum, need to be explored to build skills

Other ways of bringing skill to the parks should also be explored such as volunteers, master gardener programs, and endowed positions in horticulture. The Emerald Necklace Conservancy could pursue these goals as part of a capital maintenance initiative.

14. Maintenance Recommendations

Re-establish the primacy of park maintenance

Re-establishing the primacy of park maintenance is a key recommendation of this report. Park maintenance falls into four basic categories:

- General Maintenance – this includes the monitoring of general park conditions, the removal of trash and the cleaning, painting, minor repairs and field maintenance, repairs to playgrounds, benches, comfort stations, fences, fountains, pathways and so forth;

- Preservation and Conservation – includes the small-scale restoration and preventative maintenance of such artistic and historical components of the park landscape as statues, bridges, stairways, masonry wall, shelters, views and vistas etc;

- Horticultural Maintenance – includes planting, pruning, mowing, mulching, fertilizing and watering of park lawns, flowers, shrubs, and trees;

- Woodland Management – includes the specialized skills and management strategies needed to manage and maintain the woodland areas;

- Waterbody Management – includes the specialized skills and management strategies needed to manage and maintain the Muddy River, Wards Pond, Leverett Pond areas;

MAINTENANCE RECOMMENDATIONS

- **Promote Efficiency in Maintenance**
  To every extent, the City of Boston, the Town of Brookline and the Metropolitan District Commission should support the new maintenance plan and standards for the Muddy River Parks of the Emerald Necklace. The new maintenance plan is essential to setting of consistent standards and practices for park maintenance.

- **Re-establish the primacy of maintenance within the Muddy River Parks of the Emerald Necklace**
  Re-establish the basic park maintenance skills by forming a dedicated park workforce whose primary job responsibilities are park maintenance and repair in the Muddy River Parks of the Emerald Necklace.

  Re-establish "lost" maintenance skills such as horticultural care, woodland management and water body management by:
  - Higher horticultural standards
  - Develop specialized woodland management and crews;
  - Develop specialized water body management practices

  Reassign a handy man to the park as part of a dedicated park maintenance crew.

- **Develop and implement park-wide maintenance and management standards and guidelines for key maintenance areas**
  A key recommendation of this report is to increase the standards and levels of maintenance, particularly horticultural care.

  Develop a park-wide set of standards and practices for particular maintenance "areas" such as woodlands, gardens, open parkland, playgrounds, athletic fields, turf should be developed. These standards should be adopted and linked to an inspection and ratings system to ensure park-wide consistency.

  Other management options that investigate the appropriate size a scope of "in-house" verses contracting out of services should be investigated. A number of service contracts to deliver or augment small in-house crews may provide an efficient and cost effective strategy.

- **The season should be the basic organizing structure for park maintenance.**
  While most public organizations operate on the basis of a fiscal or calendar year broken down into four equal quarters, this structure is not particularly meaningful for park managers. Some of the most important factors shaping the pattern of work – use, growing conditions, and weather – are tied to the season. Seasons, moreover, do not necessarily correspond neatly to quarters. They are of unequal length. It is feasible to define seasons as clusters of months approximating the natural conditions.

Park management should define "official" seasons as groups of months to structure park operations. The following are suggested:

Winter: December through February (3 months)
Spring: March and April (2 months)
Summer: May through September (5 months)
Fall: October and November (2 months)

For planning purposes, the year should begin on Marsh 1st and end on February 28th. Any work plan should be divided into four seasonal plans. Each seasonal plan has a basic theme reflecting the natural conditions, level of use and the appropriate work.

To a significant extent, seasonality is part of the natural rhythm of work in a park: spring and fall are important planting seasons; the summer is the peak period for cleaning and operations (e.g. special events). Some of the aspects of seasonality are less obvious.

An organized formal preventative maintenance and repair program should be organized as part of the winter and spring. Late winter and spring are the natural time to repair winter damage (both horticultural and non-horticultural) and to prepare for the summer crowds. Priority areas and conditions should be identified and the assignment of special resources.

The focus of winter work program should be an intensive training program involving all full-time managers and park workers. The winter is the season of lowest use, and generally the lowest workload. Depending on the weather conditions, winter can also be a time to complete fall clean up tasks as well as perform preventative maintenance. In the best-managed operation there is some slack time. This time is better used for training than for inventing tasks or taking longer to do the tasks that need to be done. Training programs should be developed and implemented for:

- A comprehensive training program for first-level supervisors is the top training priority. This program should cover topics such as supervision of staff and volunteers, communication, computers, personnel and union rules and CPR.
- Workers should be cross-trained to help each other and to foster potential for teamwork. Horticultural skills should be taught along with communication, First Aid and CPR.

- **A dedicated park maintenance crew should be formed.**

A dedicated, uniformed multi-skilled park-based crew whose responsibilities would include cleaning, horticultural work, field maintenance and simple repair tasks.

A dedicated park staff would:
  - Be responsible for all aspects of park maintenance and care of the park including cleaning, trash removal, horticultural care, mowing, basic pruning, and simple repair tasks such as bench repair, painting, and field maintenance;
  - Develop an understanding of changing user trends, which may affect daily operations.
  - Provide a public face to all park users; be knowledgeable about the park and be able to answer questions

  - **Develop a tree maintenance and replanting plan for the Muddy River Parks of the Emerald Necklace.**
    The mature deciduous shade trees are probably the foremost character-defining feature of the Muddy River Parks of the Emerald Necklace.

    A primary recommendation is to begin active management of the valuable, large shade trees that can benefit from regular pruning and disease management. Selective removal of diseased trees is important for the health of the remaining trees and in some cases advisable because the diseased or damaged trees are potential hazards.

    A second major recommendation is the development of a replanting strategy for the Muddy River Parks of the Emerald Necklace. New trees should be planted on an annually, selected from a list of trees that are appropriate from both a historic and ecological perspective.
      - Develop a management program for pruning, fertilization and removals;
      - Develop a planting plan for the park, with the distribution of trees to reflect historic groupings and vistas. Trees should provide shade for roadways and picnic areas, emphasize vistas, and stabilize eroded areas and streams. This would include gradual

removal unhealthy or inappropriate trees, such as Norway Maple.
  - Begin to restore the balance and diversity of tree species by planting trees that were part of the park's earlier history and have since decreased.
  - Conduct planting on a regular (if possible, on an annual) basis, to ensure a range of various aged trees for the future.

- **Develop a woodland management strategy**
  Both the City of Boston and the Town of Brookline should work together in conduction a comprehensive woodland management study, along with a comprehensive woodland policy. The process should begin by convening a woodland advisory committee and organizing a series of woodland seminars to guide the development of a woodland program and policies that meet the ecological needs of the Muddy River Parks of the Emerald Necklace.

  To date, very little management work has been done in the woodlands. Although budgets for these areas might be modest, thoughtful timely intervention is more critical than large sums of money when implementing a woodland management program. Some work may be performed by teams of volunteers, under the direction of an experienced urban forester. A forest management team should be formed to develop a planning, design, and implementation plan for the park's woodlands. Long-term woodland goals and policies should be developed. Areas that should be examined include:
    - Off-trail use of bicycles and vehicles;
    - Trampling
    - Storm water management
    - Spread of exotic invasive vegetation
    - Maintenance and security
    - Education and signage

  A comprehensive woodland management and restoration plan should be developed. The forested areas of the park have deteriorated over the past years. Erosion and bare compacted soil are increasing in extent and a few aggressive exotic species are naturalizing throughout, displacing valued native plant communities and remnant planted landscapes. At the same time, the infrastructure of trails, paths, bridges, and storm water facilities are in dire need of repair.

A woodland plan may focus on:

- Working in one area at a time, gradually remove the most noxious invasive species;
- If the ground is disturbed or canopy gaps are opened by removals, planting of native woodland plants should follow immediately;
- Begin to re-establish the shrub and under story layers that are presently underrepresented in the woodlands with naïve woodland plants.
- Monitor the canopy gaps that exist and when the budget permits, plant groves of small trees to gradually fill in.
- Repair trails and paths to address storm water management an off-path trampling.

A woodland management strategy would provide an opportunity to establish woodland management skills and develop volunteer opportunities. A donor program could be developed to publicly focus attention on the important role of trees and woodlands to the City of Boston and Town of Brookline and the urban environment.

15. Implementation Recommendations

Implementation Strategies

The Muddy River Parks of the Emerald Necklace presents a formidable management challenge. Despite its peaceful, natural beauty, a dynamic tension exists in the Parks. Its design contains an inherent tension, a man-made landscape that must accommodate visitors. Park maintenance crates a dynamic tension: can the park today have lush lawns and diverse plantings, as the designers intended, or can no more be done than keep the place clean and the grass mowed: a management structure that fragments the delivery of services and reduction of skilled staff exacerbate the tension.

The Muddy River Parks of the Emerald Necklace is complex. The number and type of visitors require a complex service deliver system. Visitors mean that a high level of services is committed to daily cleaning. The landscape design of the Park is complex, demanding labor-intensive servicing and a consideration of aesthetics in making decisions, an unusual situation for an urban park. Finally, service delivery is complicated by the fact that other municipal agencies have service responsibilities for the Muddy River Parks of the Emerald Necklace.

Preserving Capital Re-investment

The challenge for park managers of the Muddy River Parks of the Emerald Necklace is how to introduce sound management practices that will:

- Effectively preserve and protect the capital reinvestment.
- Introduce higher and consistent park-wide standards of maintenance.

These management strategies must recognize the need for constant, vigilant cleaning and horticultural care that protect the Muddy River Parks of the Emerald Necklace while encouraging people to enjoy the parks to the fullest. All these management decisions must be made in an environment where resources are scarce and the voices of constituency groups are strong.

Park maintenance is of particular important at this time. The Muddy River Parks of the Emerald Necklace has suffered the affect of tight maintenance funding, an aging workforce, loss of skilled staff, and the natural deterioration of the aging process. Like all public agencies, the MDC, Boston and Town of Brookline must do more with less, thus challenging its managers to find operating efficiencies and new sources of revenue and to sharpen arguments for increased operating and capital budget resources.

Managing the Muddy River Parks of the Emerald Necklace over the next ten to fifteen years of rebuilding and beyond calls for improving management, which in any organization is difficult and time consuming. In public agencies, without profits to spur efficiency, the task is even more complicated. A number of elements are required to bring about change:

- The agency's agencies managers all levels must be committed to it;
- Resources have to made available for it
- New ways of

Closing the Gap that Exists Between Needed and Available Hours

We estimate that 35,500-43,200 hours will be needed annually to maintain the Muddy River parks of the emerald Necklace at higher standards. The Muddy River Restoration project alone will require 16,000-21,350 hours annually to maintain the restored landscape and water bodies. Most of the added hours for maintenance will be needed beginning in 2006. The MDC will be responsible for the Charlesgate project area in early 2005; Boston will assume increased maintenance responsibilities beginning in early 2006 and Brookline in early 2008.

The estimated gap between needed and available productive hours is estimated to be between 18,028 – 25,728 hours, which equates to 12-17 FTE's.

Strategies for closing the gap should begin as son as possible and not wait until capital projects are completed.

This report highlights a number of management and maintenance recommendations for improving maintenance and raising maintenance standards. Many of these can begin now, don't increase existing operating budgets, and will improve

Short-term Recommendations (years 0-2)

- **The Muddy River Parks of the Emerald Necklace should be seen as one park**

To the fullest extent possible, the MDC, City of Boston and Town of Brookline should blur the jurisdictional lines and see it as one park.

- **Position of park coordinator should be created and implemented**

Create the position of park coordinator to coordinate park-wide maintenance among three agencies to initiate geographic (park-wide) accountability.

- **Develop selected park-wide maintenance standards**

Develop park-wide maintenance standards for selected maintenance tasks such as mowing, bench repair, and horticultural maintenance for new plantings. Park-wide mowing standards should include:

- Mowing cycle (10 day)
- Trimming standards

- **Define and sanction the role of the role of the Emerald Necklace Conservancy**

Develop and sign a Memorandum of Understanding defining the role of the Emerald Necklace Conservancy. MOU should be signed by MDC, City of Boston, and Town of Brookline.

- **Strengthen the role of the Emerald Necklace Conservancy**

MDC, City of Boston and Town of Brookline and ENC should jointly develop and approve 2 year strategic plan for Emerald Necklace Conservancy to guide its fundraising and programmatic efforts.

- **Develop a two-year park-wide tree removal and pruning plan**

Develop a two-year park-wide tree removal and pruning plan approved and funded by MDC, City of Boston, and Town of Brookline using outside contractors.

- Schedule two (spring and fall) park-wide clean-up days involving MDC, Boston, Brookline and volunteers
- Develop and implement joint winter training program focusing on First Aid, CPR and supervisory training

Medium-term Recommendations (years 3-5)

- Expand park-wide maintenance standards to include horticultural tasks
- Rotate Park Coordinator
- Continue and expand tree removal and pruning contract
- Investigate additional maintenance tasks suitable for contracted services
- Develop park-wide trash plan and standardized receptacles
- Increase use of volunteers by 25%
- Support and strengthen role of Emerald Necklace Conservancy
- Add 3-4 skilled horticultural staff
- Continue and expand joint training to include new horticultural tasks

Long-term Recommendations (5 –10 years)

- Develop and implement plan to meet increased maintenance needs resulting from the Muddy River Restoration Project

Expand joint horticultural training

(To be Developed Further)

Emerald Necklace Citizens Advisory Committee (CAC)
Summary Notes – November 14, 2001 CAC Meeting

Northeastern University, Faculty Center
96 The Fenway, Kerr Hall, 2nd Floor

Meeting Attendees

A list of all meeting attendees is included as Attachment 1.

Meeting Agenda

I Welcome, Opening Remarks & Comments Received

Jane Wells, MA Office of Dispute Resolution, CAC Facilitator
Amanda Greishbach, MA Office of Dispute Resolution, CAC Facilitator
John Burckardt, P.E., Project Manager

- Jane Wells introduces Loraine D'Orsi who is a new staff member at MODR.
- Joyce Starner resigned from the CAC and has recommended another person from her organization (Symphony United Neighbors).
- John Burckardt also received a letter from Irene Gillis (former CAC member), which will be discussed later in the meeting.

II Discussion of Consultants' Work on Draft Park Maintenance Plan

Tim Marshall's Draft Park Maintenance Plan

- CAC agrees to comment on the second draft of Tim's Park Maintenance Plan using the same format for commenting on the DEIR.
- Page 1, first sentence – A CAC member suggested replacing Boston Common with Charles River in the definition of the Emerald Necklace. The CAC members present did not reach consensus to recommend this change, but agreed to suggest that Tim Marshall contact Charles Beveridge (Olmsted historian) for more information.
- A CAC member recommended that Tim Marshall differentiate between maintenance activities that have never occurred as opposed to maintenance practices and standards that need to be improved. (For example, existing lawn maintenance in the Fens is only mowing and litter pick-up – other maintenance such as aeration does not occur). This is compounded if the staff-hours that the Parks Dept. says are being done are not actually accurate, which means the gap for proper maintenance is greater than reported.

- A CAC member recommended looking at staff-hours using an analytical approach and by considering the tasks, terrain and jurisdiction to determine how many people are required, so that numbers can be backed up with concrete data. A table format may be useful.

- A CAC member commented that oversight and supervision of park maintenance needs to be strengthened. CAC members questioned their role for long-term oversight of maintenance practices.

- Page 41, under Medium-term Recommendations, need to define what the baseline is for the current use of volunteers, so that the recommended 25% increase can be quantified.

- Page 31, a CAC member commented that clarification is needed on how a position for the Muddy River Park Coordinator would be rotated between Boston and Brookline. It seems complicated.

- Emerald Necklace Conservancy – a CAC member commented that Clarissa Rowe's report did not make recommendations for Boston. Tim Marshall's report mentions the Conservancy, but does not mention the possibility of the Conservancy fulfilling a management role for the Emerald Necklace.

- A CAC member recommended that a notice of proposed removal [shade tree law] be posted on significant trees in Boston prior to their removal, so that this practice is consistent with Brookline practices.

- A CAC member recommended a review of laws, policies and practices to improve consistency for maintenance practices among Boston, Brookline and MDC parks/staff.

- A CAC member commented that there are staff people who are dedicated entirely to athletic field maintenance and are typically separate. They need to be included as part of maintenance practices.

- A CAC member asked: How could the efficiency and capabilities of existing staff be improved and how to direct the efforts of increased staff?

- Page 18 – a CAC member noted that the 2-year maintenance contract was discouraged by Tim at last meeting (10/29/2001), however he seems to support the contract in his Draft Report. Another CAC member requested that Tim Marshall revisit page 18, because the CAC members are not confident that the 2-year maintenance contract is the best option. A CAC commented that the written report should reflect Tim's oral report.

- John Burckardt reminded the CAC that at a previous CAC meeting the 1-year contract was determined to be too short and a 2-year alternative would be more beneficial. Bruce Conklin stated that Tim Marshall was concerned about the turnover of ownership from contractor to park staff and when that occurs. What are some alternatives to address the CAC's concern (e.g. phase in Parks staff to work with contractors, etc? It was suggested that the report consider alternative approaches for implementation of the 2-year maintenance contract.

- A CAC member commented about the need for oversight, supervision and follow-up on the two-year contracts to make sure they have complied with their contract. Another CAC member suggested that more specific maintenance tasks, such as a watering schedule, be stipulated as part of their contract.
- A CAC member recommended that Tim Marshall include the need for uniform tree specifications for Brookline, Boston and MDC as one of his recommendations. [The CAC member noted that Brookline currently has up-to-date tree specifications].
- CAC members recommended that Tim Marshall include a section translating the FTEs into dollar amounts by job categories.

III. Discussion of Review Process for DEIR

- CDM is aiming to have the DEIR ready for submittal to the CAC by mid-December.
- A CAC member recommended that the CAC review the DEIR section by section using their previous CAC comments on each section and followed by review of the 21-page chart attached to Oct. 29th meeting notes.
- Another CAC member hoped that the chart is used as tool rather than defining a product.
- A CAC member commented that the DEIR should contain more than the minimum requirements established in the Secretary's Certificate on the ENF. Specifically, the DEIR should address maintenance and funding.
- A CAC member commented that the CAC needs to focus on substantive issues rather than format, etc.
- A CAC member emphasized the importance of the letter to the Secretary and that the CAC need to allow enough time for the drafting of this letter by the end of the review period.
- Jane Wells recommended that the CAC review the Role of the CAC prior to work on the letter to the Secretary.
- John Burckardt commented that he is compiling a master distribution list for the DEIR for public review and requests names and addresses of members of the public who might be interested in receiving a copy. John also requested locations available to house the DEIR for public review of the document.
- Recommendation that CAC begin to think about schedules for possible CAC meetings in January – weekly meetings on alternating days, beginning the second week of January. John Burckardt will put together a random schedule of meetings and check with CAC regarding availability.
- A CAC member questioned whether the proponents need to attend the January meetings.

IV. Process Issues / Organization

- Distribution of DEIR: Jane Wells is following up on whether all CAC members must receive complete copies of the DEIR according the MEPA regulations or whether members can receive copies without appendices attached if one complete copy is received by the CAC as a whole and kept at a centralized location.

CAC Replacements:

- Kelley Brilliant, director of the Fenway Alliance and replacement for Paul Mentag, introduced herself.
- CAC members who choose to resign should send resignation letters to the Secretary of Environmental Affairs who is then responsible for appointing their replacement. Jane Wells spoke to Betsy Sure-Gross to urge the Secretary to expedite the replacement process.
- Clair Flury, a Fenway resident who regularly comes to the CAC meetings, indicated that she was interested in becoming a CAC member.
- CAC Correspondence:
    - Irene Gillis' comment letter: John Burckardt will distribute her letter to the CAC.
    - Follow-up re: Richard Heath's resignation: After much discussion, the CAC agreed to invite individual members to contact Richard regarding his resignation. However, the CAC agreed that the Richard should approach the Secretary himself if he is interested in returning to the CAC.
    - Draft letter from George Haggerty re. Richard Heath's resignation: CAC members appreciated the work done by George Haggerty, but the consensus of the CAC members present was that a letter should not be sent. See above comment.
- Brookline Project Impact (Isabella Callanan) – Isabella requests that the CAC consider endorsing the proposal that the Town of Brookline consider a different future for the "Industrial Island" near Route 9. The CAC confirmed that these lands are not part of their scope of responsibilities. CAC members present agreed that members can individually inform their respective organizations about Isabella's proposal and invite these groups to comments as appropriate. Isabella will keep the CAC informed about how and where they can respond.
- Nov 27, The Secretary of Environmental Affairs has called a meeting dealing with the parkways.

Next Meeting

The next meeting of the CAC was scheduled for the **week of January 7, 2002.** The exact date and location will be announced in a separate mailing. This will be the first of a series of weekly meetings to review the Draft Environmental Impact Report (DEIR) in order to prepare a comment letter to the Secretary of Environmental Affairs.

Enclosures: Attachment 1 – Sign-In Sheet

Emerald Necklace Citizens Advisory Committee

Meeting

November 14, 2001

Sign-In Shee

Name		Affiliation	Signature
Kathy	Baskin	Charles River Watershed Association	
Charles Alan	Birnbaum	National Park Service	
Kelly	Brilliant	Fenway Alliance	Kelly Brilliant
Edward	Burke	Restore Olmsted's Waterway Coalition	E Burke
Isabella M.	Callanan	Friends of the Muddy River	Isabella M. Callan
Suzanne	Comtois	Fenway Community Development Corp	
Christine	Cooper	Jamaica Pond Project	
Edward	Cutler	Brookline Resident	
Frances Allou	Gershwin	Mahoney Hawkes LLP	Fran Gershwin
Alan	Goodman	The Abbey Group	
George	Hagerty	Fenway Studios,Inc.	
June	Hatfield	Boston GreenSpace Alliance	June Hatfield
Gary R.	Hilderbrand	Reed Hilderbrand Associates, Inc.	
Adam	Kahn	Brookline Conservation Commission	
Frances J.	Kemp	FCA, Friends of the Muddy River, Fenway Resident	Frances J. Kemp

Emerald Necklace Citizens Advisory Committee

Meeting

November 14, 2001

Sign-In Sheet

Name		Affiliation	Signature
John	Leahy	Northeastern MPA Student	
Arleyn A.	Levee	National Assn. For Olmsted Parks	
Arelne	Mattison	Emerald Necklace Conservancy	Arlene Mattison
Hugh	Mattison	Friends of Leverett Pond	Hugh Mattison
Lauren	Meier		Lauren M
George	Proakis	Boston Resident	
Marion	Sabal	Fenway Garden Society	
		Symphony United Neighbors	
Fredericka	Veikley	Fenway Civic Association	
Eileen	Woodford	Nat'l Parks & Conservation Asn	

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Emerald Necklace Citizens Advisory Committee

Meeting

November 14, 2001

Sign-In Sheet

\\parksmail\bospark\Muddy\CAC Meetings\CAC-31 Nov 14, 2001\[CAC Sign-in Nov-14-2001.xls]Add'l sign-in pages

Name	Affiliation/Address	Phone	E-mail
Jane Wells	MODR	617-727-2224	
Loraine Della Porta	MODR	617-727-2224	
Angie Parker	BPRD	617-635-4505	
Margaret Dyson	BPRD	617-635-4505 x6518	
Annie Blair	Town of Brookline	617·730·2616	
Bruce Conklin	CDM	617-452-6543	
Claire Flury	Fenway Garden Soc. 95 Park Dr Boston, MA 02215	617.266-1	
Fran Gershman		617 948-2585	fgershw @attglob
Amanda Griesbach	MODR	617-727-2224	
Kara Willin	Fort Point Assoc.	617-357-7044	
John Burckardt			

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